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ISSUE 162 JULY 2015

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IN CONTROL OF VIRTUAL REALITY

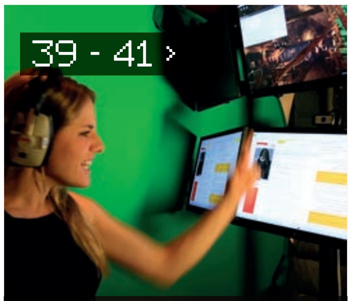
With the technology gaining momentum and consumer devices on the horizon, we look at the evolution of input and controllers for virtual reality

JOHN RICCITIELLO

On the chaos of democracy

CITY CRAFTERS

Building Lumino City



YOUR GAME'S VOICE

A look into voice acting

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EDITORIAL

VEXED BY VR

IT'S NOT FUN. It's not social.

These were the arguments made by Nintendo of America president Reggie Fils-Aime at E3 this year about why the *Mario* maker is not leaping on the increasingly crowded bandwagon many believe to be barrelling towards the future of games development.

Virtual reality – once the most excitable word on everyone's lips – is rapidly becoming like Marmite for devs: you either love it or hate it. The middle ground is rather quiet about the whole affair. To me, the technology faces three barriers.

The first is motion sickness. While Valve claims to have sold this, I've certainly played an Oculus demo this month that left me feeling more than a little queasy.

The second is control, something a lot of companies are spending a lot of time working on, as Craig has explored this month (*head to page 11*).

Lastly, there's Reggie's concerns about the fun and social side of gaming. As long as the experience is based around locking yourself away in a headset, Fils-Aime's argument stands. But with experiments like Epic's *Couch Knights* and a very promising demo I saw behind closed doors this month, this is also easily solved given the right amount of time, effort and creativity.

It's jarring to be writing with such uncertainty when demos at GDC 2013 had me convinced VR was a surefire hit. But don't confuse my doubts with despair: the technology holds a lot of promise. It will be most interesting to see whether that promise is lived up to when the first consumer devices arrive later this year.

James Batchelor
jbatchelor@nbmedia.com

ALPHA

NEWS & VIEWS
ON GAMES
DEVELOPMENT

The chaos of democracy

Catching up with Unity CEO John Riccitiello, co-founder Nicholas Francis and former creative director Charles Hinshaw, Develop discusses the merits of making game engines and tools available to all and the potential problems it causes

THE DEMOCRATISATION OF games development rumbles on, but is the industry prepared for the flood of new creators that the technology firms crave?

Speaking at Unite Europe in Amsterdam last month, Unity CEO John Riccitiello once again reiterated the company’s dedication to this democratisation. It’s a sentiment that has been adopted by major rival and Unreal Engine creator Epic Games, as well as more specialist firms such as PlayFab, which have both made their products available for free over the last few months.

The ever-diminishing barriers to entry means that anyone can make a game. The downside, some argue, is that anyone can make a game.

“I don’t see any downside to that,” Riccitiello told *Develop*. “If I had my way, I’d like to see 50 million people using Unity – although I don’t think we’re going to get there any time soon. I’d like to see high school and college kids using it, people outside the core industry. I think it’s sad that most people are consumers of technology and not creators. The world’s a better place when people know how to create, not just consume, and that’s what we’re trying to promote.

“Anyone can be a creator. It’s not a velvet rope with a bouncer, which is the way it seems to most people – it seems intimidating. We’re trying to reduce that barrier and increase the power and give you the possibility of dreaming. I don’t know what the future holds, but there’s not going to be self-designing games any time soon. The point is, I’d like to see more people create.”

> ***If I had my way, I’d like to see 50 million people using Unity.***
> John Riccitiello, Unity

OPENING THE FLOODGATES

It’s a wonderful dream, but the plethora of clones, copycats and uninspired titles on the market – particularly on mobile – would suggest that the ‘world of creators’ Riccitiello often referenced in his Unite keynote won’t be the utopia he hopes for.

It’s something that the Unity team has been aware of since the very beginning, although co-founder Nicholas Francis says this never dissuaded them from pursuing their goals.

“Before we did Unity, I was an indie filmmaker and when the Final Cut editor became available, suddenly there was a floodgate opening, allowing more people to do new things in that space,” he says. “I very much wanted to enable that creativity in games.

“Most indie films – including the ones I made – are junk, but that’s fine. I guess something just happened once the App Store came in where suddenly you could make a tonne of money. There were some unfortunate feedback mechanisms that I don’t think anyone saw coming.”

Charles Hinshaw, former Unity creative director and fellow co-founder at Francis’ new studio Framebunker, agrees – adding that the “gold rush mentality” is the best example of democratisation’s “ugly side”.

Democratize
Solve hard Problems
UNITE 2015 EUROPE
#UNITEEUROPE

"Democracy is chaotic thing," he said. "I don't want to minimise the possibilities it offers – it's a great win for everyone, especially when there are mechanisms to find signal in all the noise that it has created."

Francis adds: "It becomes messy, and it always takes a while for someone to figure out how to clean up this mess and find a good path through the jungle.

"But I would rather have a jungle with no part than a desert, which is what we had before. I'd rather have diversity, and the mess that results from it."

QUALITY BEATS QUANTITY

Video games is not the only market to suffer from this flood of content, of course. The world of literature has been forever changed by the eBook and online services like CreateSpace, which allow anyone to have their title available on Amazon within less than a day's work.

But Riccitiello says the presence of so much sub-par content doesn't necessarily damage the quality products that are out there.

"Think of it this way: there's millions of people creating content for YouTube, and not all of it's good," he said. "There's billions of people taking photos on their smartphones, and yet the world of photography is still a vibrant sector where people can make careers.

"The better content that has commercial potential is always going to find a market."

Francis agreed, adding: "If there's tonnes of crap out there and no one's buying it, then it's not doing much harm. It's taking up space on a server somewhere – so what?"

However, Hinshaw warns that reams of poor quality titles might get in the way of people finding "the real gems", content that could be transformative in some way for them.

The responsibility, it seems, then passes to the app stores and marketplaces to help guide users to the better quality content. Apple, certainly, has gone to great lengths to improve on this, revamping its App Store in the last few months to focus on editorially curated recommendations and lists, rather than algorithms that developers have found ways around.

> ***"I'd rather have diversity, and the mess that results from it."***
>
> Nicholas Francis, Framebunker

Hinshaw argues that not only is it everyone's responsibility to improve disoverability, but the industry is already well on its way to doing so.

"The press are helping every time they cover a game, because they're only writing about the games that are good," he says. "We as developers are doing our part to stop the flood by making something that isn't crap. A player does something to stop it every time they tell a friend they played something cool. When there's a lot of noise, it becomes about amplifying the signal and everyone plays a part in that."

GAMES DEV FOR ALL

Is a flooded market a small price to pay for the democracy Unity so proudly inspired? Both Francis and Riccitiello maintain that it is, with the former pointing out that a market that allows devs to release games so easily also enables them to learn from any mistakes they make.

"Sometimes something you thought was noise becomes something better if the developer keeps toiling away at it – maybe there was a good idea there to begin with," said Francis. "You don't want to deny developers the chance to get things like that started."

Riccitiello, meanwhile, keeps his attention focused on the 'world of creators' he so determinedly wants to build during his tenure at Unity.

"We're trying to make things better so more creators can find a market," he said.

"Frankly I hope every high school kid in the world makes a game before they graduate in the next five years. Because in doing that, they'll find out something about themselves. They'll find out that they don't have to look at their television with a quizzical expression wondering how it works. And I just think that's a better place to be.

"That doesn't mean that all of them are going to find a commercial market," he adds. ■

Dare brings the world to Dundee

Abertay University discusses Dare ProtoPlay and its growing international appeal

ABERTAY UNIVERSITY IS once again organising Dare ProtoPlay, the indie games festival element of its renowned Dare To Be Digital competition.

It will run from Thursday, August 13th to Sundaym August 16th in Dundee's Caird Hall, and has become vital part of the student competition.

"15 teams compete to show their hard work to the public, and meet with publishers and members of the media," Abertay University's Dr William Huber told *Develop*.

"Preparing a game for an expo is an important skill: teams need to consider all the demands on the attention of their audiences, and create an identity that communicates what they and their game are really about.

"Dare ProtoPlay is attended by families and gamers of all ages and skill levels: they are less forgiving of usability problems than many juries of experienced designers."

Dare has become an increasingly international affair, with teams from beyond the UK not only taking part, but triumphing in years past.

"Overly Kinetic, a team of students from the University of Southern California, won the most recent BAFTA Ones to Watch Award for their game, *Chambara*," said Huber. "This year, we've had entrants from all over Europe, Asia and North America; about half of the applications came from outside the UK."

Overly Kinetic's Kevin Wong added: "Things have been crazy and exciting since the BAFTAs and a lot has happened. Our biggest goal is to continue development on *Chambara*. Our team has expanded, and we have the guidance of great mentors. Overly Kinetic have since used the experience of demonstrating its game at ProtoPlay to showcase their title at E3's IndieCade exhibition back in June.

Like the rest of the Abertay team, Huber is keen to continue growing both Dare Protoplay and the contest's international appeal.

"It is our goal that Dare to be Digital be seen as the premiere student competition in game design, full stop," he said. "Dundee is recognised as a hub of game development. I can think of no better place for the world to come together to recognise student promise and achievement in game design." ■

www.daretobedigital.com

DEVELOP DIARY

Your complete games development events calendar for the months ahead

AT A GLANCE

JULY 10TH
F1 2015
Well, that's at least one game coming out in July then.

JULY 11TH
World Population Day
Celebrate a dystopian future of overcrowding's consequences, today.

JULY 17TH
Ant-Man
Hollywood shakes things up with the release of a Marvel super-hero film.

JULY 17TH
Godzilla
The game marks a departure from the recent film by featuring Godzilla.

JULY 23RD
QuakeCon
Time to play some games with actual people. In the same room. Madness.

JULY 24TH
Inside out
Turns out listening to the voices in your head is perfectly sane.

DIARY DATES

Develop Awards
July 15th
Brighton, UK
www.developawards.com

JULY

DEVELOP: BRIGHTON 2015
July 14th to 16th
Brighton, UK
www.developconference.com

#GAMESUR
July 17th
London, UK
www.gamesurconf.eu

QUAKECON 2015
July 23rd to 26th
Texas, USA
www.quakecon.org

NUCL.AI
July 20th to 22nd
Vienna, Austria
www.nucl.ai

AUGUST

GDC EUROPE
August 3rd to 4th
Cologne, Germany
www.gdceurope.com

GAMESCOM
August 5th to 9th
Cologne, Germany
www.gamescom-cologne.com

SIGGRAPH 2015
August 9th to 13th
LA, USA
s2015.siggraph.org

CASUAL CONNECT USA
August 11th to 13th
San Francisco, USA
usa.casualconnect.org

EVENT SPOTLIGHT

GAMESCOM

Gamescom is Europe's bigger consumer games show, and returns once again next month from August 5th to the 9th.

But not just for consumers, Gamescom is a great chance to meet developers and publishers as thousands descend on Cologne to show their latest games and tech at the event. In fact, the first day is dedicated to trade and media only. The business area in halls two to four are open from August 5th to the 7th from 9am to late evening on each day.

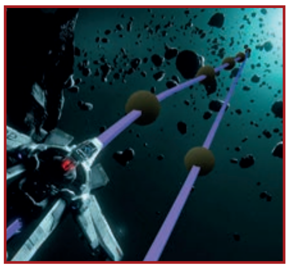
Held at the gigantic complex Koelnmesse, last year the event attracted some 335,000 visitors. Many more watched the event's big conferences livestreamed around the world.

There were also 700 exhibitors at the show from 47 countries, and you can expect a similar number showing off their wares in August.

> ***"Gamescom is a great chance to meet developers and publishers as thousands descend on Cologne."***

The event will see the return of the successful MCV@Gamescom Daily, a print and online resource for visitors. For advertising enquiries, contact Conor Tallon at **ctallon@nbmedia.com**. For editorial questions, contact Christopher Dring at contact **cdring@nbmedia.com**. **www.gamescom-cologne.com.** ■

COMING SOON



DEVELOP #163
AUGUST 2015

- All the winners of the Develop Awards
- The latest advancements in the artificial intelligence space and what it means for games

DEVELOP #164
SEPTEMBER 2015

- A look the eSports scene and how developers can make an impact
- How version management tools are supporting production

For editorial enquiries, please contact jbatchelor@nbmedia.com
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Big names back Develop Awards 2015

A plethora of leading service firms and more have pledged their support to this year's prestigious awards ceremony taking place in Brighton on July 15th. We speak to the companies that help make this event possible

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EXCLUSIVE DRINKS RECEPTION PARTNER

ICONIC FUTURE

USE OF A LICENCE OR IP AWARD PARTNER

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InnoGames

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14-16 July 2015
Develop:Brighton
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KEYWORDS STUDIOS DRINKS RECEPTION PARTNER

"As a company which prides itself on its commitment to quality across the games industry, Keywords Studios is delighted to partner with the Develop Awards and celebrate excellence in interactive entertainment"
Andrew Day, CEO, Keywords Studios

UNITY TECHNOLOGIES GOLD PARTNER, PLUS AWARD PARTNER (MICRO STUDIO)

"The Develop Awards are a fantastic platform to showcase the best creativity and talent in the European games industry. We are proud to sponsor the Develop Awards, and we're excited to see how many Unity developers take home awards at the ceremony."
Antony Douglas, vice president EMEA, Unity Technologies

AMIQUS GOLD PARTNER

"The Develop Awards provides a fantastic opportunity to recognise significant industry contributions. We're delighted to sponsor the awards as part of our on-going support and commitment to this amazing sector. Good luck to all the nominees."
Liz Prince, business manager, Amiqus

UKIE GOLD PARTNER

"The UK games sector is going from strength to strength. And with so much talent out there we're delighted to again be partners for the Develop Awards – celebrating the amazing businesses and the inspired creativity that make this industry so special."
Jo Twist, CEO, UKIE

ICONICFUTURE AWARD PARTNER (USE OF A LICENCE OR IP)

"The list of finalists is very impressive. The competition is tough and all of them deserve to win for their outstanding work and contribution to the games industry."
Clemens von Berger, CEO, Iconicfuture

OPM JOBS TABLE GIFT PARTNER

"The Develop Awards is the biggest night on our calendar. We've attended the Awards for over ten years and love to get involved as much as we can."
Kim Parker-Adcock, owner, OPM Jobs

DEVELOP: BRIGHTON 2015 EVENT PARTNER

"Over the last ten years, Develop:Brighton has become the go-to event for the whole development community. From the largest studios to emerging indies, it offers everyone the chance to learn but also to have some fun in the evenings, and all beside the sea. Of the many social events, the Develop Awards leads the pack in celebrating all that's great in the world of games development."
Andy Lane, director, Tandem Events

GREEN MAN GAMING EVENT PARTNER

"We're proud to be supporting the Develop Awards as they truly celebrate every aspect of games development, and we wish all the nominees the very best of luck."
Gary Rowe, EVP, Green Man Loaded

INNOGAMES EVENT PARTNER

"The Develop Awards are a great opportunity to meet the most interesting people in UK Gaming. And it is an awesome show where you have a lot of fun. That's why we love to support it."
Dennis Heinert, head of public relations, InnoGames

LOCALIZEDIRECT EVENT PARTNER

"The Develop Awards is a key event and we want to support the celebration of all that is good in our industry. Not only the excellent games and studios but all other contributors that help to make games the best they can be."
Michael Souto, business development director, LocalizeDirect

UNIVERSALLY SPEAKING EVENT PARTNER

"Universally Speaking is thrilled to partner with the Develop Industry Excellence Awards 2015. It is one of the most prestigious events in the games calendar and we are delighted to give recognition for the creative work the games industry has achieved over the last 12 months. Good luck to all the nominees."
Loreto Sanz Fueyo, director, Universally Speaking

Variable declarations

//COMMENT: BUSINESS

Real-world strategies for virtual reality

Joost van Dreunen takes a closer look at the various VR strategies currently at play

The big players in the VR space, such as Oculus (right), have different strategies on taking on the market, but it will be up to the developers to breathe life into the fancy new hardware

THE INTRODUCTION OF a new device or platform to a consumer market can be a wildly exciting moment. It shuffles the deck in terms of market leadership, presenting opportunity and challenge for all participants alike, and, ideally, fundamentally disrupts an industry to the point of true revolution.

It's a fantastic dream, really, and the tangible memory of the introduction of the smartphone, for example, leaves us permanently curious for what comes next. One of the dreams about to come true is that of virtual reality.

With $2.6bn in investments made last year alone, an impressive host of giant companies have presented themselves to lead the world into the era of virtual reality.

The current market expectation is that by late 2016, the total install base for VR will be approximately 10.8m users; most of them PC-based (46 per cent), followed by console (28 per cent) and mobile (26 per cent).

In terms of content, games are expected to make up well over three-quarters of the available content. This is not surprising, as consumers of interactive entertainment have historically always pushed the boundaries for hardware capacity and processing power. The reasoning, of course, is that once gamer audiences successfully adopt VR, working out the kinks in the process, it will spread to the mainstream market.

But the companies that currently busy themselves to bring us this new experience each have a clear strategy in mind that rhymes with the goals and interests of the larger organisation. And looking more closely reveals several distinct design agendas.

VIRTUAL REALITY'S VANGUARDS

Oculus is arguably the device with the largest momentum behind it. While no price point has been set at the time of writing, the expectation is that the Rift will sell for around $350 and require another $1,200 or so for the necessary PC rig. In terms of content, there are currently around 370 VR applications available for the Oculus Rift.

During a recent press conference, however, it showed a rather bland array of consumer applications, clearly geared toward appealing to the widest range of audiences. In the absence of a clear killer app, it makes sense to target the whole market and this fits rather well with parent owner Facebook's own strategy. Striking a deal with Xbox to make its game library available for the device is a clever way of ensuring appealing content at launch. And offering subsidies for devs suggests the company is trying to take the lead, although the $10m it is making available can't possibly be enough to develop a true triple-A experience.

Sony, on the other hand, has been sparser with information on Project Morpheus. During its E3 press conference, VR played a minor part, suggesting it is interested but not strongly invested. Sony is a consumer electronics firm, which means Morpheus will be a closed platform and only work with a specific set of devices – i.e. PlayStation 4 – and certified software applications. This greatly narrows its addressable market and relegates VR to the realm of ancillary device.

> ***"In terms of content, games are expected to make up well over three-quarters of the available virtual reality content."***

Targeting the largest audience by making it as accessible as possible is Google, relying on people's smartphones to deliver a VR experience. Consistent with its overall strategy, it seems to imagine VR as a way to boost the smartphone business, as its Cardboard 2.0 is compatible with bigger handsets and its accompanying SDK now supports iOS. Google has proven itself willing to take a chance and invest in technologies and platforms without having a clear sense of what its final outcome will be.

Valve, with its loyal following of dedicated, tech savvy gamers, is taking the approach of an intermediary. Similar to its Steam Machine, Valve's version of VR will be geared toward putting the company in the position of a software distribution platform, allowing it to focus on optimising price points, resolving discovery issues and so on.

Finally, Microsoft arguably casts the widest net by blending VR with augmented reality. Consistent with its new course toward the Internet of Things and the emphasis on allowing consumers to play and experiment with software, its HoloLens offers a vision of the future where we overlay information onto the everyday and manipulate it.

But the challenge for content developers is this: which horse do you bet on?

Currently, it would seem that Oculus has the public's attention and therefore the largest possible footprint. Given the distinct strategies formulated by the various aspiring platform holders, it is now up to the development community to breathe life into these machines.

Joost van Dreunen is co-founder and CEO of SuperData Research, provider of relevant market data and insight on digital games and playable media.
www.superdataresearch.com

//COMMENT: MOBILE

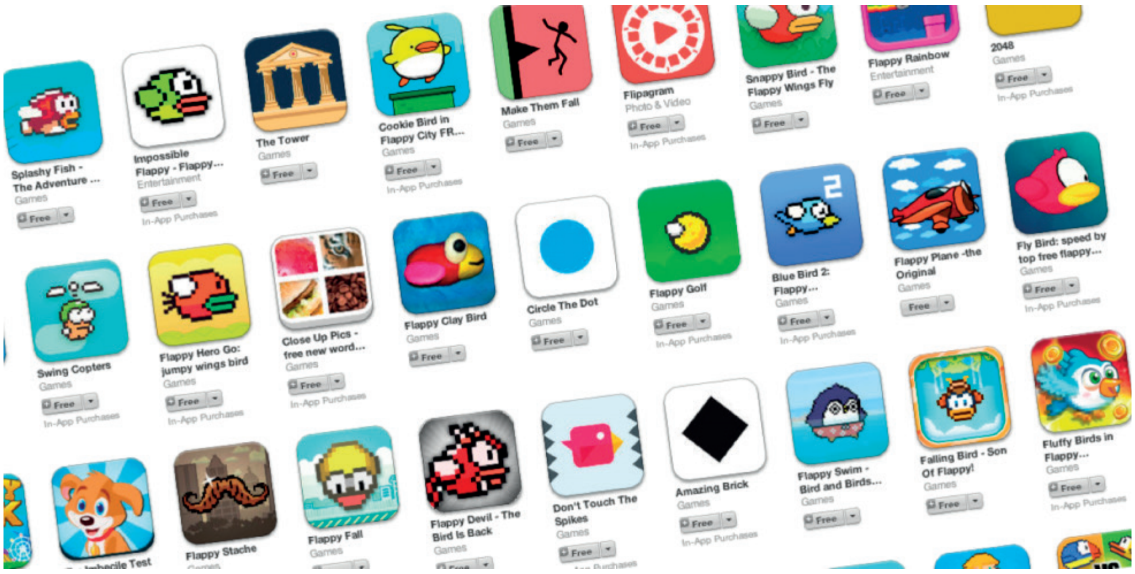
App downloads at any cost

Amazon's **Peter Heinrich** warns devs against the sneaky tactics studios use to drive their mobile games

IT'S A GOLDEN age for app development. There are a bajillion active mobile devices out there, and a potential customer is using each one.

A small number of target platforms makes fragmentation manageable. Hardware is powerful and development tools are mature. Successful business models? Take your pick; there are several to choose from. It has never been easier – or cheaper – to publish software to a global audience.

Still, there are challenges. Ask a mobile developer to name the most significant obstacles to success and "discovery" will likely top the list. Selection is overwhelming. Building a successful app isn't the hard part; it is simply making customers aware of it that is difficult. If you succeed in this, you must still convince them to download your app instead of innumerable competitors.


Splashy Fish - The Adventure ...
Impossible Flappy - Flappy...
The Tower
Cookie Bird in Flappy City FR...
Make Them Fall
Flipagram
Snappy Bird - The Flappy Wings Fly
Flappy Rainbow
2048
Swing Copters
Flappy Hero Go: jumpy wings bird
Close Up Pics - free new word...
Flappy Clay Bird
Circle The Dot
Flappy Golf
Blue Bird 2: Flappy...
Flappy Plane -the Original
Fly Bird: speed by top free flappy...
Flappy Stache
Flappy Fall
Flappy Devil - The Bird Is Back
Don't Touch The Spikes
Amazing Brick
Flappy Swim - Bird and Birds...
Falling Bird - Son Of Flappy!
Fluffy Birds in Flappy...

Some developers resort to cloning games for a quick cash-in, but this can do irreparable damage to their reputation in the long-term

WHATEVER IT TAKES

At first, an overflowing app catalogue would seem to benefit customers – after all, there is more to choose from and prices are likely to be competitive. But if content isn't structured, customers get frustrated quickly, so app stores organise their content into lists by category, genre, user rating, and popularity, among other aspects. These lists provide so much exposure that often just appearing on one is enough to ensure that an app does well.

Some developers believe that listing is not only sufficient, but also actually necessary for success (it's not, by the way). They will do anything to get there, from posting bogus reviews by hand, to using scripts and bots that inflate positive ratings, to offering payment or in-app rewards in exchange for favorable customer feedback. There is nothing unethical in asking your users to give your app five stars, but it crosses an ethical line when you offer to pay those who do.

Whatever the justification, using the IP of others without permission is never acceptable. Lookalike apps and clones will always spring up around a theme, feature, or mechanic that has proven successful, but many push the limits of the grey area between merely appearing similar and plagiarism.

The fact is, apps developed "in the style of" someone else's original work draw more scrutiny from app stores that review submissions. They can even be flagged programmatically by automated systems, based on brand names, trademarks, and associated keywords.

Despite this, some developers insist on submitting apps whose title or description duplicates verbatim the work of another. Often the app icon will be virtually indistinguishable from the original, or feature changes so trivial that they are difficult to discern even when comparing the images side by side.

App stores that screen submissions expend a lot of effort to detect and exclude apps that are misleading or infringe copyrights, so it's best to over-communicate if there is any possibility for confusion around your app. Reputable app stores prohibit manipulation of reviews or ratings, and may even log attempts. Build your fanbase the old-fashioned way; the alternatives are not worth the risk to your livelihood and reputation.

The surest path to success for any app is marked by the value it creates for customers through its inventiveness, originality, humour, depth, performance, specialisation, or other special something it has to offer. Concentrate on these and the downloads will follow. ■

Peter Heinrich is a developer evangelist at Amazon, and will be discussing this topic further at Develop: Brighton. Watch out for his talk, entitled 'Sneaky Tips to Boost Downloads, Increase Sales and… Get Banned'

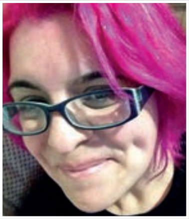
//EXTRA CONTENT ONLINE

"Don't hide. Don't blame. Don't get angry. Above all, don't ban your fans! They really are the most important people in all of this publishing business."

Listen to the banned

Andy Payne, Mastertronic

deve1op.net/1djpjYx



"Working with children has taught us a vast amount of things about both games and their players."

Learning to make games with kids

Esther MacCallum-Stewart, UWE

deve1op.net/1fw3l0o

"Finding out that code has not only been stolen but is being replicated could close that business down very quickly."

Stop assets walking out the door

Mark Warren, Perforce

deve1op.net/1ctjkQ7

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THE WITCHER 3: WILD HUNT
VOICE CASTING, DIRECTION & RECORDING BY SIDE

"Humour and wit are combined with jaw-dropping emotional moments, fully immersing players in this modern day epic."

HardCoreGamer

"The voice acting is expressive with the actors able to expertly convey anything from joy, sarcasm, excitement, to sombreness."

thesixthaxis

"Not only is the dialogue superbly acted, but I can see every emotion the voice is trying to convey in each character's face."

VideoGamer

" A cast of great characters and plenty of superb dialogue."

Push Square

"The characters you meet are richly developed, well written and wonderfully acted."

Digital Spy

"It helps that it hosts the most interesting cast yet."

Destructoid

WWW.SIDE.COM

SIDE

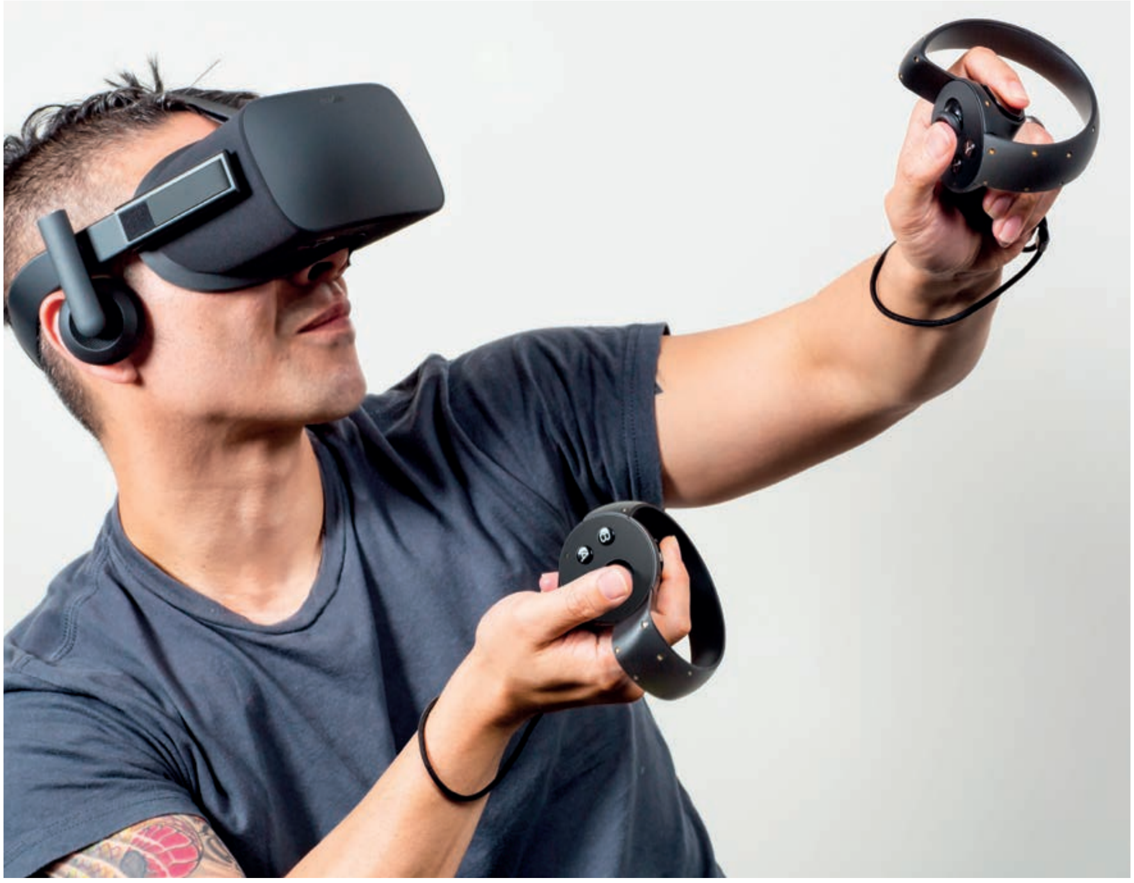
PREPARING FOR BATTLE
D3t on recreating the Battle of Bannockburn in Stirling
P22

CITY CRAFTING
State of Play discusses how it built Lumino City out of paper, cardboard and lots of glue
P24

BRAINS EDEN
What the Cambridge-based event offers aspiring and experienced developers
P26

Virtual control

The technology for virtual reality is evolving at a rapid pace as the dawn of the consumer headsets closes in. **Craig Chapple** asks the experts behind the tech and the developers using it how to offer the best gaming experience in a virtual world



Oculus Touch is the dual motion control setup the VR firm currently has in development, though it won't ship with the first consumer Rift. Instead the firm has opted for the Xbox One gamepad

THE VR REVOLUTION is nearly upon us.

At least, that's what many in the games industry believe it will be. It appears the main contenders have now all emerged for the initial rush. Oculus, which kick-started the entire sector, is set to open pre-orders on the Rift later this year with a view to launch its first consumer headset in 2016.

Sony meanwhile has the Morpheus, likely to be targeted for PS4 use, while Valve has its HTC headset with the innovative new laser-based tracking system Lighthouse. There's also the cheaper end of the scale with Google Cardboard and Samsung Gear VR. It's an exciting time for VR.

Yet despite getting closer to a consumer reality, there are still some major question marks surrounding VR. One of those is: What is the best control input for virtual reality gaming?

THE CONTENDERS

There are a few camps right now. The traditional console controller – the Oculus Rift will ship with the Xbox One gamepad for owners to use right off the bat, and motion controllers: PlayStation Move, the Nod BackSpin and the Oculus Touch, though the latter will not ship straight away. Then there's near-full body control, including treadmils such as the Cyberith's Virtualizer and Valve's aforementioned Lighthouse tracking tech.

> ***“Oculus Touch is only the beginning of what we all want virtual reality to eventually be.”***
>
> Palmer Luckey, Oculus

Traditional controllers appear to be the easy default option, but Oculus, Valve and Sony seem to be heading toward dual motion control, where your hands rather

Cyberith's Virtualizer treadmill (right) is one example of how players can be fully immersed into the virtual world, tracking all their movements from running to jumping and even crouching

Level
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than a whole host of buttons interact like with the game world as they would in real life.

"Our goal was to create something to let people interact with virtual worlds in the same way they interact with the real world – grabbing, throwing, examining, poking, etcetera," says Oculus founder Palmer Luckey of its recently unveiled Touch controllers, which also includes haptic feedback.

"We also wanted to enable communicative gestures like waving, pointing, and giving a thumbs up. Touch is only the beginning of what we all want VR to eventually be, but it does let players interact with games in ways that no other controller allows."

nDreams CEO Patrick O'Luanaigh, whose studio has shifted fully to VR development, says people who try out the tech for the first time instinctively try to reach out and touch the virtual world, making hand tracking the most intuitive control system.

"Hands are our primary control system for the real world, and we all understand how to touch things, pull things, pick up and throw objects," he explains. "What better input device could there be if you're trying to simulate reality?"

Something like Cyberith's Virtualizer treadmill, meanwhile, takes the experience even further to using your legs to explore the virtual landscape. Co-founder Holger Hager says it allows users to walk, run, jump, crouch and sit in virtual environments, tracking movements through integrated optical sensors.

"This fully integrated optical tracking system enables decoupled viewing and walking directions, making it possible to achieve an unprecedented level of presence and immersion," he explains.

VYING FOR CONTROL

Having personally tested Valve's VR hardware, the motion controllers feel completely natural to use. The brain can even give you a sense of real depth perception to reach out and touch objects, even in the virtual space. It's an ideal solution for immersion. But what about those genres where a keyboard or traditional controller may be more ideal? Such as real-time strategy, or a MOBA?

VR enthusiasts don't seem to be worried by this, and Luckey says he has already seen solutions to this potential problem.

"Touch incorporates traditional controls like an analogue stick, buttons, and triggers so developers can make hybrid experiences that combine VR with proven genres and control schemes," he says.

"Tracking position and orientation of the controllers also means you can simulate mouse-type controls by pointing the controller. We have already seen some interesting VR strategy games that treat the playing field like a giant board game – it lets you interact with the game in cool ways, like, for example, picking up units and moving them to their destination."

Rebellion CEO Jason Kingsley, whose studio is working on a reimagining of classic Atari game *Battlezone*, says virtual reality doesn't have to mimic real-life, and in fact his studio's aim is to do the complete opposite.

"It's to create environments and experiences that you can't do in real life," he states. "At E3 we saw a lot of people really enjoyed the unreality of our *Battlezone* demo, that abstract sense of being inside what is clearly a digital world – and virtual reality is the only way to really be in a digital world. In any case, with VR still in its infancy and people still experimenting, I don't think we should really be ruling anything in or out at this stage."

SETTING STANDARDS

One potential concern for developers in VR is the fragmentation of technology, particularly when headsets can support mobile, tablet, PC and console. Razer is one firm that believes it has the solution with OSVR, a unified platform for VR and augmented reality development for both hardware and software.

The project is open-source, and now has a list of industry backers including Ubisoft, Techland, Gearbox and Technical Illusions, creators of augmented reality tech CastAR.

Razer's OSVR product evangelist André Ruff says the problem with the current market is if developers back the wrong horse, they could lose the ability to sell their product.

"This is what OSVR addresses directly – as well as the possibility to gain the ability to even support future hardware," explains Ruff.

Razer has developed its own headset: the Hacker Development Kit to support developers creating VR content, which it says is an affordable solution. The hardware is also modular and upgradeable; the idea is to ensure the tech is somewhat futureproof to protect devs against ageing hardware.

With such an array of control schemes, developers may have their work cut out integrating all of them for us in their games. After all, developing for a touchscreen is a completely different beast than creating for console controllers or a keyboard and mouse. It's interesting then to see a company like Oculus promoting two types of input, requiring very different experiences and approaches to development.

Assuming the initial wave of consumer VR headsets will in fact stick mostly with the console controller, what genres are emerging early on as the most popular? First-person games seem like an ideal fit for VR, but isn't the only solution.

"In fact third-person cameras can work very well," explains O'Luanaigh. "In particular, diorama-style viewpoints work extremely well, so an real-time strategy or turn-based game from a high up viewpoint would be superb in VR. There is no need for the graphical style of VR to try to simulate reality either – stylised graphics can work just as well. It's just as easy to believe that you're in a *Tron*-style world as it is a photo-realistic universe."

It's something Luckey agrees with, too. Though he states first-person is an obvious fit, including simulation games like racing, flying or set in space, he says he's seen a lot of third-person and god view games "that are also incredible".

VIOLENT REALITY

In almost any genre, one thing big triple-A games are often notorious for is violence. Whether it's gunning down hundreds of enemy grunts in *Call of Duty* or taking a chainsaw to the Locust Horde in *Gears of War*, the violence can often be gratuitous. This can be fun on a 2D screen, but being pitted in the action up close could prove an uncomfortable experience.

It's something Oculus recognises, too. The Rift will display comfort ratings for games that have the potential for motion sickness or may provide a scary experience for the user.

O'Luanaigh explains that as emotions are amplified in a good VR game, developers need to avoiding "turning things up to 11".

"Fear is stronger in VR, as players feel that they are in the action, rather than watching it," he says.

"Happiness and excitement can both be stronger as well for similar reasons. Therefore, I think the shock of graphic violence is likely to be similarly affected. Developers need to be aware of this, and make sure that players are warned about anything that they may be uncomfortable with."

Kingsley states that once immersion reaches a certain point, devs need to be careful not just about the intensity of the experience, but the duration and pacing as well.

"For example, one and a half hours of non-stop action in a movie is, quite frankly, not very compelling. You just get numb to it," he says.

"Also, with VR we can do a lot of different things to broaden horizons. For example, a number of our early users have said they've simply enjoyed driving around the abstract world of *Battlezone*. So why not have a mode in there that's all about sightseeing, as it were? If you don't want to shoot things, that's fine. You can just trundle around in your *Battlezone* tank, enjoying and taking in the incredible virtual, neon landscapes."

A lot is riding on the early adopters of VR. Some of the biggest publishers in the games industry are currently operating on a 'wait and see' approach with the sector, before putting in any significant investment. From the tech to the games, everyone needs to get it right to ensure consumer adoption, and also ensure those users have good things to say about their experiences.

Despite some naysayers on the potential for virtual reality, Kingsley states that within the industry there's a feeling that this new wave "isn't a flash in the pan".

"The tech needed for VR has progressed a long way in the last couple of years and has now reached a tipping point, and it'll continue getting better – we've seen a number of devices from hardware manufacturers, each with their own strengths, and they're all exciting. But the thing that remains the real drive in the games industry, however the games are presented, is content. Ultimately with VR, the content will be the key."

Luckey, meanwhile, adds that for early VR headsets, despite the promise of a new kind of controller, it actually makes more sense to supply a traditional gamepad early on, given the decades of experience developers have with this. That's why the Oculus Rift will initlally ship with an Xbox One Controller.

"Many genres have been shaped and defined by the tools gamers use to play games," he explains. "Contrast that with 1:1 motion controls, which have very limited history – it is going to take time for developers to figure out what works best, and it does not make sense to force every Rift buyer to purchase something that is going to be of limited use in the immediate future, especially when it comes to Rift buyers who have little interest in motion controls." ■

Top to bottom: Cyberith's Holger Hager, Rebellion's Jason Kingsley, nDreams' Patrick O'Luanaigh and Oculus' Palmer Luckey

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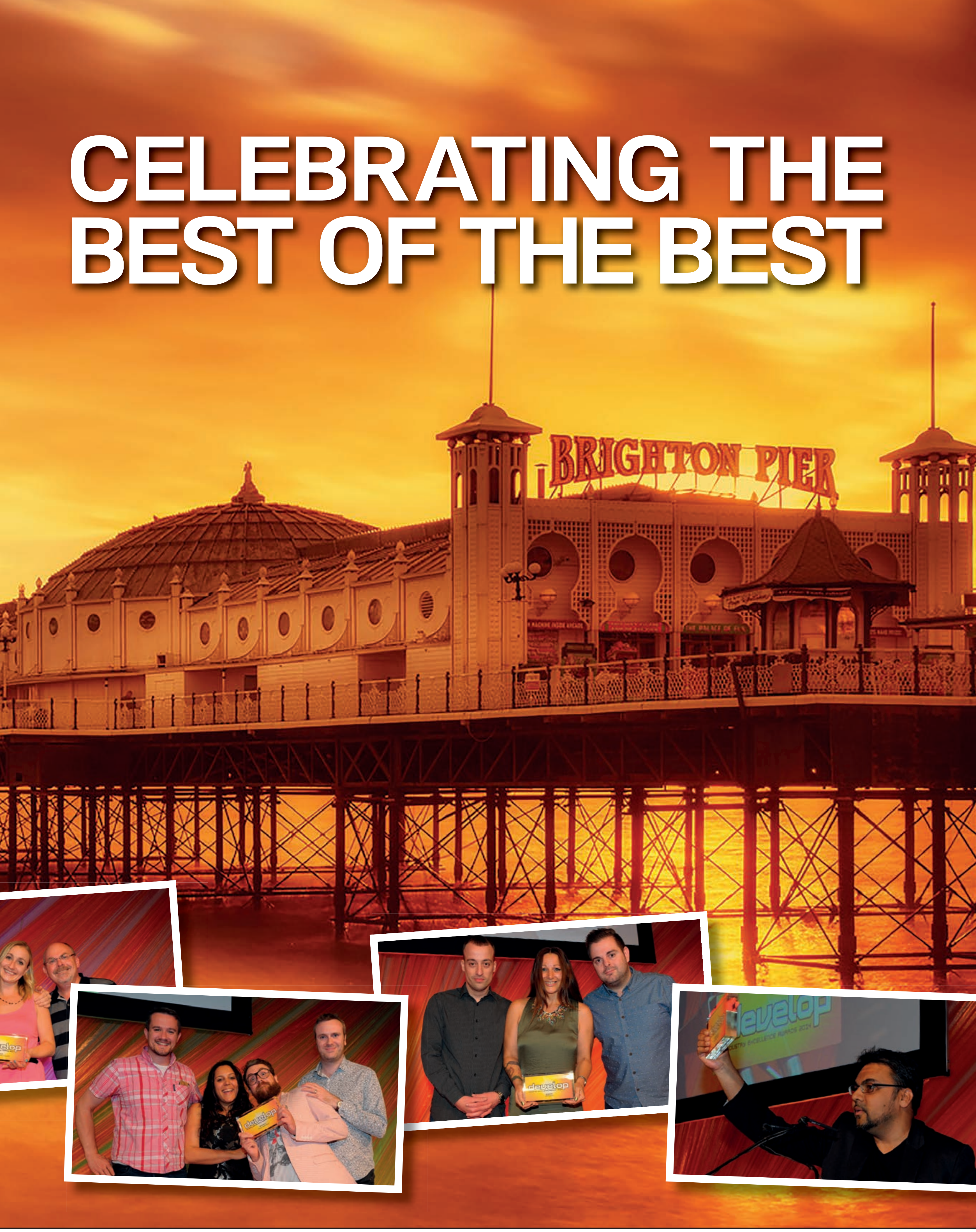
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WHERE: Hilton Metropole Hotel, Brighton
WHEN: July 14th to 16th
MORE INFORMATION: www.developconference.com
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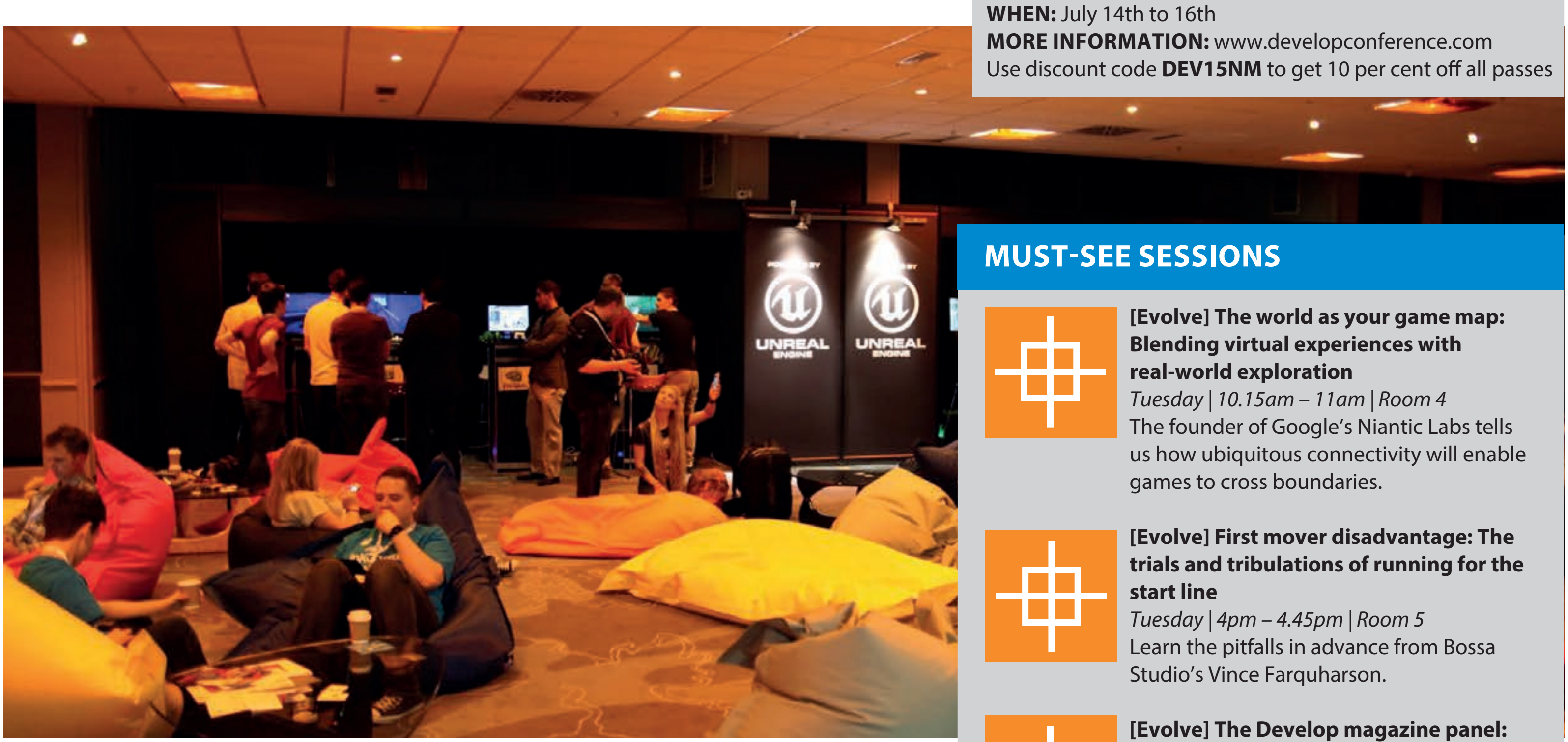

Heading to Brighton?

We round up everything you need to know about this year's conference, including the hottest sessions and networking events

Top to bottom: N3twork's Neil Young, Vlambeer's Rami Ismail and Gearbox's Randy Pitchford will deliver this year's keynotes

THE KEYNOTES

Evolve Keynote: Peak mobile – are we there yet?
Tues | 9.30am – 10.15am | Room 4
Industry veteran Neil Young explains why we haven't yet seen all that mobile can do.

Develop Keynote: Why We Fight
Weds | 9.30am – 10.30am | Room 2
Gearbox Software's CEO and President Randy Pitchford will share his years of experience with Brighton attendees.

Indie Dev Day Keynote: Rami Ismail
Thurs | 10am – 11am | Room 2
The Vlambeer co-founder will discuss the challenges, concerns and hopes faced by all indie developers today.

THE DEVELOP AWARDS 2015

This year's awards will be held on Wednesday from 7pm in the Hilton Metropole's Oxford Suite. There are 137 companies in the running for this year's revamped roster of 20 awards. Book your place at **www.developawards.com**.

THE EXPO

The Develop Expo runs alongside the conference from Wednesday, July 15th to Thursday, July 16th. Free to all visitors, this also includes the Indie Showcase and Develop Networking Bar sponsored by Unreal Engine.

This year's exhibitors include: Amazon, Bluegfx, Ciklum, GamesAid, Invest In Warwickshire, Kingston University, MHT Game, Mixamo, NFTS, Perforce, Player Research, Playwest (UWE Bristol), Reallusion, Special Effect, Sprung Studios, Unity, Vicon Motion Systems, and The Wellcome Trust.

OTHER HIGHLIGHTS

■ Running again this year is the Develop Game Jam, a 24-hour hackathon that will take place from Wednesday to Thursday.

■ The Develop:Brighton app is once again available for free, allowing users to track their schedule and contact other attendees. More info at **www.developconference.com**.

■ After hours plans kick off with Ice Breaker Welcome Drinks in the Waterhouse Bar from 6pm on Tuesday, with Close of Conference Beers taking place in the same venue from 6pm on Thursday.

■ The GamesAid Charity Poker Tournament will be held at Relentless Software's offices on Tuesday from 8pm. The address is 1 Air St, Brighton, BN1 3FB.

MUST-SEE SESSIONS

[Evolve] The world as your game map: Blending virtual experiences with real-world exploration
Tuesday | 10.15am – 11am | Room 4
The founder of Google's Niantic Labs tells us how ubiquitous connectivity will enable games to cross boundaries.

[Evolve] First mover disadvantage: The trials and tribulations of running for the start line
Tuesday | 4pm – 4.45pm | Room 5
Learn the pitfalls in advance from Bossa Studio's Vince Farquharson.

[Evolve] The Develop magazine panel: What next big thing is just around the corner?
Tuesday | 5pm – 5.45pm | Room 4
Editor James Batchelor hosts a panel discussing the major growth areas expected in the next 18 months.

[Business] Ed Vaizey, Culture Minister (Session title TBC)
Wednesday | 10.30am – 11am | Room 2
Insight from long-time industry supporter, Ed Vaizey: the UK's Minister for Culture, Communications and Creative Industries

[Design] Allow them to believe: Lessons in creating rich dynamic VR gameplay
Wednesday | 2pm – 2.45pm | Room 2
Virtual reality pioneer Katie Goode explains how to make VR experiences that go beyond the cockpit.

[Marketing] Twitch, YouTube, Vine… Keeping ahead of the mobile marketing curve
Wednesday | 3pm – 3.45pm| Room 5
TinyBuild's Mike Rose explains why internet celebs are the new gateway to your audience.

[Audio] Achieving the impossible: Planning sound and music for huge triple-A games
Thursday | 10am – 11am | Room 5
Rockstar alumni and Solid Audioworks founders Will Morton and Craig Conner share their experience.

[Business] People's Choice
Thursday | 2pm – 2.45pm | Room 2
A brand new session voted for by attendees ahead of the conference. Choices include 'Financing Tips From The Film Industry', 'Market It Like An Indie' and 'Becoming Indie Before The Word Was Invented'.

[Indie Dev] Killing the 'lucky indie' myth: How to build a sustainable micro studio
Thursday | 3pm – 3.45pm | Room 1
Maia creator Simon Roth dispels the misconceptions around some of the most successful indie games.

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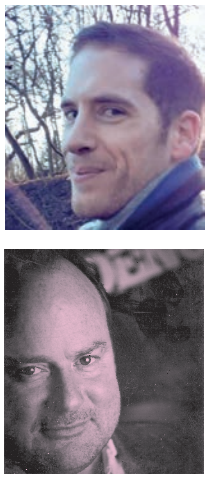
A decade of development

This year's Develop: Brighton conference will mark a ten-year run in which the industry has changed beyond anyone's imagining, says **Owain Bennallack**, who has served a decade on the event's steering committee



Top to bottom: Spilt Milk's Andrew Smith and Revolution's Charles Cecil

TEN YEARS AGO, Develop: Brighton opened to the sound of indie band Razorlight playing a flash gig across the road. Conference attendees were amazed that the inaugural event was already such a draw.

The gods of pop are fickle and for all I know, Razorlight are plumbers or English teachers today – but Develop: Brighton has gone from strength to strength. Of course, the conference has had to evolve.

"The diversity of teams and creators, the games they produce, the platforms they run on, and how they're funded has increased enormously," says Develop: Brighton advisory board member Richard Bates of SCEE. "It would have been easy to predict the industry would move in one direction or another, but it's more surprising that it seems to have moved in every direction at once."

When Develop: Evolve was added, the phones that enabled Razorlight to summon their fans were becoming games platforms. Before long mobile games – and the business models they thrived on, such as free-to-play – were rivalling traditional games for revenues and encroaching on the conference proper.

INDIES OFF THE ENDANGERED LIST

Perhaps Razorlight went on to make mobile games. Everyone else has. Indeed, along with the rise of 'play anywhere' platforms like mobile and social gaming and the broader demographics they encouraged, the indie explosion is the most notable feature of the last ten years. And nobody saw it coming.

"Pre-App Store, pre-Steam, there was barely any indication we were about to see such a glorious profusion of small independent teams making games," admits Jonathan Smith, now of Gamecity but back then ushering in his own revolution with *LEGO Star Wars* for Traveller's Tales. "Designers crave novelty, and industrial structures tend to reward predictability."

Revolution's Charles Cecil adds: "Ten years ago we faced a bleak future, as did most independent developers."

It's perhaps a depressing memory for veteran developer William Latham. Now an academic at Goldsmiths, Latham's studio Computer Artworks was closed in 2004.

> ***"Every child born in the last decade has grown up with games as their primary entertainment medium."***
>
> Keiran Connell, Microsoft

"Ten years ago, games publishers behaved like medieval barons closing down talented independent development studios at will, with impunity," Latham recalls.

No surprise then that the advisory board meeting for the first Develop: Brighton conference was almost on a war footing, as smaller developers banged the table for survival sessions to support struggling independent developers.

Yet just a few years later, Latham says: "The developers finally got back in control."

Cecil reckons: "Everything changed with the iPhone. Apple swept away the mobile hierarchy. The iPhone's touch screen proved to be an ideal device for games. The ubiquity of broadband and the existence of iTunes allowed digital distribution on a mass scale for the first time. And the revenue split was so, so much fairer than anything that we had managed to negotiate previously."

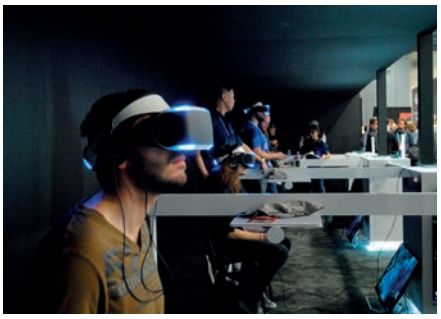
CHALLENGED TO CHANGE

There can be a contradictory attitude when it comes to change in games. On the one hand, gamers have always wanted the next new thing, and games creators can be as faddish as any pop band when it comes to mimicking what's hot.

Yet games developers are only human, and according to Boss Alien's studio head Jason Avent, human beings "inherently don't like change, because moving away from what you know can be dangerous".

Avent's start-up created the multi-million dollar franchise *CSR Racing* for iPhone. Yet he admits that as a hardcore gamer he initially struggled to see the appeal of mobile platforms. It was an attitude typical among the Develop Conference's attendees in its initial years.

But everything was changing. "It was a steep learning curve and required us to shake off old prejudices but it was worth it," Avent says now. "Without change, there's no progress and there are fewer opportunities. Prejudices can blind you and unless you're



DEVELOP in Brighton
INDIES ARE INDIE

willing to invest the time to fully assess emerging technologies and new ways of doing things, it's easy to miss out."

ENGINEERING A DIFFERENCE

Former Sony London Studio head Jamie Macdonald is now working at a start-up, Fosse Games, which is applying game smarts to healthcare applications. So perhaps it's not surprising that he doesn't see technological change as a difficulty for games developers.

"I think we deal with technological change very well – it's kind of dialled into the DNA of our industry," Macdonald says.

Veteran Develop: Brighton advisory board member Keiran Connell of Microsoft takes the same view: "We're the first industry to see the potential of new technology – mobile, Kinect or VR – and we're always excited to get our hands on the next generation of hardware to see how far we can push the limits of the machine."

However as gaming's reach has expanded, different issues arise.

"Sometimes we don't realise our level of influence on society," Connell continues. "Every child born in the last decade has grown up with games as their primary entertainment medium. We have a unique opportunity to make diverse and meaningful experiences that can be expressed in no other medium."

Macdonald voices the same concerns. There aren't enough women in our industry, and too few games with mass appeal. "We're still too often stuck in the ghetto of a teenage boy's bedroom," he says.

BLOCKING PHOTOREALISM

Ten years ago, Spilt Milk MD Andrew Smith had only recently graduated from a teenage bedroom himself. Yet even this relatively youthful entrepreneur has seen great changes.

"I think the biggest surprise is not that we've become so huge, but rather how quickly it all happened," Smith says. "We've gone from being a cool but geeky pastime to something that is literally the biggest entertainment industry on the planet. It's amazing, incredible, and a wonderful time to be making games."

What surprises is how readily Smith's generation of games makers has been able to put aside the relentless focus on visuals.

"Who knew that ten years later the most popular game on the planet would be a modern equivalent of LEGO with eight-bit graphics?" Sports Interactive boss Miles Jacobson marvels.

Develop: Brighton audio track curator John Broomhall says this doesn't just apply to visuals: "Music and audio people once again have to evangelise the role sound and music content play in an interactive experience," he says. "The advent of many more small-scale teams, though hugely welcome, has changed the landscape."

Of course, money and technology have always been weighed against creative ambition in games, but Andrew Smith sees the proliferation of Unity, GameMaker, and the Unreal Engine over the past decade as having helped settle the argument.

"I'm all about getting easy to use tools into the hands of creative people," Smith says. "The more games that succeed on their content, mechanics and stories and the fewer on the thrill of the new – technologically speaking – then the better things will get."

BACK TO THE FUTURE

So what does the next ten years hold? Virtual reality, dovetailing with wearable computers and the Internet of Things that could make everywhere a space for games – most forward-looking devs agree that's where the cutting-edge is taking us.

But Cecil – a man who has seen many cycles – suggests the future might yet look a bit more like the past: "Moving into the next phase, portals will start to flex their muscles, and the balance of power will move away from independent developers."

Perhaps we'll know if he's right by Develop: Brighton 2020. ■

Top to bottom: TT Games' Jonathan Smith, Sports Interactive's Miles Jacobson and Goldsmiths' William Latham

TEN MORE: WHAT DOES THE NEXT DECADE HAVE IN STORE?

"Subscription models will make a comeback, driven by far too many game releases for the world's eyeballs."
– Miles Jacobson, Sports Interactive

"Developers brought up on *Minecraft* will have a radical new view of game development, community and marketing. Prepare for disruption!"
– Jonathan Smith, GameCity

"I think virtual reality is going to transform our work and leisure time. Self-driving cars will provide more free time and a private space for gaming, too."
– Jason Avent, Boss Alien

"The age profile of teams will change as the PlayStation generation gets older. There will be a shift to games developed for the experienced, older gamer."
– Jamie Macdonald, Fosse Games

"The dominance of content over technology will define the next ten years. We're in a period that echoes the introduction of the Super8 in cinema."
– Andrew Smith, Spilt Milk Studios

"I'm excited that technology is less dominant in the creation of today's soundscapes. We spend much less time fighting hardware and more time being creative."
– John Broomhall, Audio professional

"There will be significant growth in serious games – particularly around lifestyle and health – as developers look for new markets as player acquisition costs increase."
– William Latham, Goldsmiths, UCL

Better tools make better games

GameSparks' CEO **Griffin Parry** discusses the importance of choosing tools carefully so devs can focus on creating

Above: GameSparks' CEO and co-founder Griffin Parry

Main: Square Enix's Lara Croft: Relic Run owes much of its infrastructure to GameSparks' backend-as-a-service offering

Committing to a game can be daunting. This is the fastest changing area of media from the creators' perspective, with the kaleidoscope of new devices, capabilities, users, behaviours and business models throwing up fresh challenges and opportunities in equal measure.

And games development is undoubtedly becoming more complex. The list of tasks that need addressing is lengthening. It's not enough to just make a great core loop with arresting art. There are many other disciplines to be understood and mastered.

But conversely, games development is also becoming less complicated. There are more tasks to cover, but the level of difficulty of each is trending downwards. This is partly about best practice being shared so quickly now. But it's also about abstraction, with the emergence of tools that remove the need to dig into the weeds.

A familiar category is game engines. In the past, everybody needed to build their game from the ground up. Now most developers choose to use a solution that allows them to skip the heavier engineering and focus on the tasks that matter most: namely, making and managing great games.

But there are other emerging categories. One of the fastest growing is backend-as-a-service – or BaaS – as provided by GameSparks and others. This is an increasingly common choice, including for major players. For example, *Lara Croft: Relic Run* is substantially based on GameSparks.

These solutions do the heavy lifting on the server side to facilitate social and multiplayer, metagame and achievement systems, and the capabilities needed to manage and optimise a game post-launch, such as analytics, roles and permissions, segmentation and so on.

THE RIGHT TOOLS FOR THE JOB

Solving complex technical challenges has always been part of the thrill of developing games. But all studios, whether small indies or triple-A behemoths, are constrained by time, money and attention. Using third-party tools may not be as romantic or fun, but it increases your chances of being successful.

Having said that, selecting the right tool can itself be daunting. Getting it wrong can have far reaching consequences – particularly with game engines or BaaS, which form such fundamental layers of a game.

So what should studios look for in a backend-as-a-service provider? Clearly the key benefits are slashing time and cost and reducing execution risk, and any self-respecting BaaS provider will offer this. But you need to peer deeply under the hood for the qualities that distinguish the great from the good.

Will they help you sleep easy at night in that week you secure an iOS feature? One of the thrilling aspects of digital distribution, particularly to mobile, is that successful games scale at nose-bleed velocity. Great BaaS providers have the expertise to manage complex infrastructure and ensure everything continues to run smoothly.

Do they provide a comprehensive feature set? A great BaaS provider will offer breadth, helping you avoid a patchwork quilt of solutions.

Will they feel empowering, or constraining? Most BaaS providers prescribe a way of doing things. The best feel like an in-house solution, because you can set them up to work exactly as you need. At GameSparks, we try never to make other peoples' decisions for them.

Can they meet your needs as you grow? BaaS is a great option for smaller studios – generally free to use and charged for only when/if you are successful. But what about when you become more established? You want higher levels of support, more stringent SLAs, implementation support, dedicated infrastructure and bespoke commercial terms. A great BaaS provider will offer all these things.

> ***"Any self-respecting BaaS provider will help slash costs, but you need to peer under the hood to distinguish great from good."***
>
> Griffin Parry, GameSparks

And finally, do they have the 'weight' and 'heft' of a quality tool? If your provider is listening they will offer test harnesses, in-line debuggers, import/export code management, snapshots, custom dashboard creation and permission frameworks so that large teams with varied roles can use the same tool.

The emergence of third-party tools helps more devs do things better. They turbo-charge the community and make sophisticated capabilities more accessible to the smaller developer. But it's the established developer who shows the way. Better tools make better games, and the better developer gravitates to them. ■

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Image credit: Bright White Ltd's Katie Blake

Engaging in battle

Games are increasingly being used in education as a method to get children engaged with their studies. **Craig Chapple** speaks to d3t on how it's teaching children the history of the Battle of Bannockburn

Image credit: Colin Bell

Jamie Campbell (above), co-founder of d3t, says by providing a captivating experience through games, children will remember the history of the subject for the rest of their lives

DESPITE BEING OUTNUMBERED two-to-one during the Battle of Bannockburn in 1314, the Scottish defeated the English in what was the First War of Scottish Independence. The Scots, led by King Robert Bruce, had been holding King Edward II's English under siege in Stirling castle, and though there were attempts to relieve the castle, Bruce fought off his enemy.

Now 700 years later, IT company d3t has brought the famous battle back to life in the form of a collaborative game for up to 30 people at the Bannockburn Visitor Centre in Stirling. Teams clash in what d3t co-founder Jamie Campbell describes as 'asynchronous turn-based' gameplay.

"Turn-based sometimes means people getting bored while waiting – but our action continues to play out between turns," he states. "Many of our 15-strong team are fans of simulation, so we put a lot of time into making the experience a lot of fun."

The experience was developed with design consultancy Bright White, Historic Scotland and the National Trust of Scotland. It has been designed to teach visitors about the battle and its importance in history. Players will also learn about the tactics of the two opposing kings, by witnessing their own version of the battle, and how it compared to reports of the real thing.

PREPPED FOR BATTLE

The project was built using open source games development tool suite Cocos2d-x. The Battlemaster, meanwhile, facilitates game sessions using two 24-inch touchscreens connected to a Battlemaster PC, which controls all networking within the system for things such as DMX lighting controllers, 30 player inputs, ticketing databases and videos projected on the walls.

"We render to a 1920x2560 frame buffer and this is output to two HD projectors," explains Campbell.

"We use nVidia Quadro cards and implemented blending, morphing and stitching to create a totally seamless image that is projected onto a giant 3D relief map of the battleground.

> ***"What better way is there of learning about a historic event than by taking part in it?"***
>
> Jamie Campbell, d3t

"We render around 2,000 animated characters to give a real sense of action. All these characters leave muddy and bloody trails as the battle continues. You will see flights of longbow arrows streaking across the map and finding their mark against the enemy."

The project has proven successful, winning the 2015 Museums and Heritage Award for Innovation for the Bannockburn Visitor Centre. The complex experience is an example of how games are increasingly being used to either educate or get people interested in something that exists outside the industry.

"The centerpiece of the Bannockburn Visitor Centre at Stirling is a fine example of what state-of-the-art technology can be effectively used for in the education sector," says Campbell. "What better way is there of learning about a historic event than by taking part in it?

"After a game, we use alternative imagery such as heat maps to show where deaths occurred, and present-day satellite imagery so players can relate local modern landmarks to historic events."

BRINGING HISTORY TO LIFE

Campbell describes d3t's work on the Battle of Bannockburn as like being left with a "museum without artefacts", given there is no physical evidence of the famous battle left. But through games, the firm was able to bring the fight back to life based on the research of expert academics.

Once players have engaged in their own battle, they can watch the Battle Show, narrated by academics Fiona Watson and Tony Pollard, to learn about how events panned out in real life.

"When the game is over the brave volunteers who agreed to take part in the historic clash between powerful Scottish and English armies queue up to witness themselves in action on the immersive, virtual battlefield," explains Campbell, before adding: "This is a dramatic and captivating three-dimensional history lesson that will remain in the memory for life for those youngsters and adults who took part." ■

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City crafting

State of Play tells **Craig Chapple** how it built an entire game out of paper and cardboard

Building Lumino City out of real materials and then transferring them into a playable game was a process that took the team three years to finish

THE DEVELOP AWARD-NOMINATED and BAFTA-winning *Lumino City* was crafted using paper, cardboard and lots of glue. Each level is based on a physical set crafted by the hands of its creators, State of Play, combining together to make a ten-foot high model city.

The game was built with the help of real architechts, and offers a unique world unlike any other. Except of course for State of Play's previous title, *Lume*, on which the developers played around with many of the techniques that would later be used and expanded upon in *Lumino City*.

But the developer's history of papercraft and artistry can be drawn back to when it was founded.

"All our games had a hand drawn element," says co-founder and producer Katherine Bidwell, though she later clarifies it's not necessarily indicative of the way the studio's creatives will always work.

"We set up State of Play in 2008, and in all our games even back then we'd use paper textures, or if we needed to animate a horse, we'd draw it and then scan it in and use it. So it's a much more natural way for us. We did *Lume* in 2011 and that was a set as well. It was a lot, lot smaller scale though, and we did some experiments with cardboard."

CAPTURING THE CITY

To build *Lumino City*'s stunning scenery, the team would very precisely design a rough virtual mock-up of a scene, to ensure its ideas for puzzles would actually work.

Once this was achieved, it would build a physical set for the puzzle and scene to take place in. Each set would then come together to form the entire *Lumino City*. A year into development, its creators then got to work capturing each scene.

Perhaps one of the most interesting aspects of the project's development is the use of the Talos camera rig, usually used in film. And what's more, these are often used for one shot a day in film – State of Play needed 150 in the same timeframe.

"They haven't done anything like that before," says State of Play creative director Luke Whittaker. "It kind of surprised the guy when he turned up. They're used to doing one shot a day probably for a film, but we were like, can you do 150?"

It was an experience that also made the team somewhat nervous. The impressive machinery cost £2,500 a day. The storyboard was honed meticulously, everything had to operate as was intended to make the puzzles work.There were no second chances.

"This thing weighs a tonne, so every little inch we were like: 'watch that model'," recalls Bidwell. "It can get within millimetres of these models without touching it."

Though a crucial part of the process, there were still two more years of development after this, with lots of programming and animation work still to be done.

The animation was done in Flash, with the game's lead character Lumi made up of photographs of coloured paper and her various elements. It was a process the team admits took longer than it had initially expected, but was ultimately worth it due to the pay-off.

"It's basically a question of putting all of these different parts together," says Whittaker. "So I'd have a run, a jump, and climb up animations.

"It's painstaking. Especially when you've got a moving character and you've got to match the character to that. And you can see that she's got a shadow as well. This is before, by the way, our final layer is gone onto it. [Developer] Daniel Fountain did some lovely code which actually applies film grain and blur to these characters and makes them sit in the scene."

DO-IT-YOURSELF

Though State of Play had its work cut out on *Lumino City*, during development the team also got to work on another game, *Kami*. Hardly a side-project however, the game was a success and provided the much-needed finishing funds for *Lumino City*. This, at a time when the studio was considering obtaining outside investment to complete the game.

"But the investor, who would have been really good, and someone to help out and finish it, played *Kami* and said you don't need me, launch this and you should be fine," says Whittaker. "And that was the best advice we ever got."

It was the studio's independence and sheer creative nous that ultimately led to State of Play creating exactly the game they wanted. It's a story of what can be achieved with a small team, some from unusual backgrounds for game dev, to create a luscious looking vista in a unique but impactful way. ■

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The Brains of Britain

Brains Eden once again invited students from around Europe to compete in a 48-hour game jam, but it's the chance to kickstart a career in development that's the real draw for attendees. **James Batchelor** finds out why the Cambridge event attracts so much attention from both industry and academia

Top to bottom: Pocket Gamer's George Osborn, Jagex's John Chalkley, and ARM's Laura Mengot Chapa

THE END OF June once again saw one of the UK's biggest gaming festivals held in the beautiful city of Cambridge.

Brains Eden 2015, organised by creative front and Anglia Ruskin University, played host to 109 students split into 22 teams, with participants hailing from far-flung places such as France, Spain, The Netherlands and, of course, the UK.

Built around a 48-hour game jam, the festival's key hook is the involvement of industry mentors and prizes that will help the winners jumpstart their career in games development. The prime example is the grand prize of a paid contract – a first for the event – at Guerrilla Cambridge, which went to NHTV student Timo Van Hugten.

There was also a series of career clinics, speed surgeries and talks from development experts – including representatives from PlayStation and Inkle Studios – to help answer the many questions students have about entering the industry.

Creative Front's Clare Green says that the industry support is the lifeblood of Brains Eden and continues to improve year on year.

"We are very proud of the relationships the festival has with the local games community," she says. "This year we introduced Pitch and Play mentoring slots over the weekend to enable professionals to support the teams with their concept development, gameplay and specific technical advice."

Crucially, the event – now in its seventh year – has proven to be so popular that many participants come back, even after they have finished studying. ARM artist Laura Mengot Chapa took part in Brains Eden two years in a row, and is returning this year as a mentor.

Popleaf co-founder Jonathan Skuse, meanwhile, has an even longer history with Brains Eden: "My colleague and I started the game jam. Initially, it was a small part – just 30 students – of quite a different event. It's become the primary focus of Brains Eden.

"I've had students tell me they've learnt more in 48 hours than they have in the previous year. Attendees who actively make best use of mentors get exposed to ideas they just wouldn't otherwise at university."

> ***"It's surprising how much you can learn from the students, especially outside your field."***
>
> Matthew Holland, Jagex

It's not just past participants who sign up to become mentors – the event is supported by a range of leading games firms, from developers to hardware specialists, including ARM, Geomerics, Jagex and more. And this has become a vital part of the game jam.

"Having strong support systems such as mentors provides students with an opportunity to learn about real industry experiences early on in their career," says Geomerics' technical artist Sam Bugden. "Access to this type of advice can really help students to avoid common pitfalls and progress within the industry much faster."

Lead mentor Matthew Holland, who also works as a game designer at Jagex, adds that the industry members taking part also benefit: "It's surprising how much you can learn from the students, especially when they need help solving problems from outside your field, and no atmosphere is quite like the buzz of dozens of keen developers busy making games.

"I learn more than you might guess: it's good practice at understanding other disciplines, and even on my own turf I sometimes get some neat new insight. An event like Brains Eden can also be a good place to look for trends in the new generation of gamers and developers."

Pocket Gamer events editor George Osborn adds that the international scope of the participants also provides interesting insight into the next generation of talent.

"I like to see what is coming next," he says. "In the past year I've seen developers in Poland, Finland, Germany, India, Ireland and all sorts of other places working on amazing projects; I'm excited about seeing what's happening here, too."

Bugden says: "Having the chance to learn from experienced mentors was an important part of my own career progression – it's fundamental for talented games developers to thrive. Events such as Brains Eden allow everyone involved to learn and develop, regardless of age or experience."

MEANINGFUL MENTORS

Creative Front's Green is keen for the industry to show its enthusiasm at events such as this, as it can be a good representation of the sector students one day hope to work in.

"The energy and passion for the industry is infectious," she says. "It is so important for students to see this, meet key industry

Top to bottom: Jagex's Matthew Holland and ARM's Sam Bugden

Main: More than 100 students travelled to Cambridge for Brains Eden and its 48-hour game jam

figures and chat about their work, portfolio and ambitions. It is hugely important for the students to not only meet professionals but also Brains Eden alumni."

WE'RE JAMMIN'

While the career clinics and mentors are useful, many agree that it is the game jam itself that proves to be the most valuable experience for attendees.

"Game jams are a very enriching experience, because you gather people from a wide range of disciplines with a common interest and passion and bring them together, giving them the opportunity to get to know each other and share information about their work and techniques," says Chapa. "Whether it is as a mentor or as a participant, you always leave feeling like you've learnt something new."

Nicholls adds: "Brains Eden holds a very friendly and competitive contest. These game jams give the competitors a taste of what it is like to work under pressure. This experience is as close to working in the industry as you can get."

All of the mentors agree there is no substitute for practical experience, and Brains Eden can serve as great practice for real games development within a tight schedule, as well as dealing with a team-based environment and the critical feedback students receive afterwards.

"Having game jams on your CV – and being able to tell good stories about them at interview – is a great sign that you get involved when working in a team, that you've at least tried development 'properly', and that a prospective employer can count on the basics in various essential skills," says Holland.

Osborn adds: "Brains Eden is a great opportunity to batter out interesting game concepts. If I had a penny for every time a dev told me 'we worked on this initially at a game jam' or 'part of the game was influenced by what we did at a jam', I'd have at least a tenner by now."

But, as Jagex's talent acquisition specialist John Chalkley stresses, participants need to ensure they work hard to further their skills once the jam is over.

"Students should continue building an understanding of the challenges facing them when searching for their first role in the industry," he says.

"Participants should combine the skills harvested from events such as this with additional self-tuition, dedication to improving their portfolio and working with modding groups online, getting to grips with the nuts and bolts of commercial game releases and improving them."

FORWARD THINKING

With Brains Eden now over for another year, the Creative Front team is already working on the foundations of next year's event – and that means more industry mentors. Fortunately, Green says there is also a healthy number of volunteers offering their pearls of wisdom.

"Hindsight through experience is a wonderful thing," she says. "Imagine all the things you would tell your 20-year-old self – what would you focus on? What golden nuggets of advice would you give? Games professionals are itching to give advice; for altruistic reasons, to give something back to the future generation of developers, inspire them and make the industry stronger for decades to come."

Even after the event, some of the mentors are keen to offer suggestions about how participants – or even budding games designers who were unable to attend – can improve their skills and therefore chances of employment.

"If you want to get into games design, get out there and design games," says Chalkley. "There are free-to-use tools and engines available today that are professional grade, and can really enable would-be developers to break into the industry proper.

"A degree in gaming is far from essential, but if you're at university on a games design course right now, ensure that you're working on extra-curricular projects, specialise in an area and don't become a jack of all trades – unless you want to work at small start-ups that need that from their employees.

Skuse adds: "Be as flexible and multi-faceted as possible. The wider industry – beyond large-scale console development or even what you'd naturally think of as 'indie' – is growing rapidly, so you'll do your employment prospects a lot of good by being as adaptable as possible. For programmers, that means don't just learn Unity and for artists don't just fill portfolios with Zbrushed space marines, orcs, and robots."

If you're interested in mentoring at Brains Eden 2016, or want to find out more about the event, please email **clare.green@anglia.ac.uk**. ■

WHY CAMBRIDGE?

The decision to host Brains Eden in Cambridge was a simple one. As you'll see in our Region Spotlight (*page 28*), the city is home to countless leading games firms.

"We have a diverse range of studios in the area working across PC, mobile, tablet, console and VR, allowing attendees of Brains Eden to experience much of what of the industry has to offer," says Jagex's John Chalkley.

Geomerics' Sam Bugden adds: "Cambridge has an amazing community of leading industry developers and studios. Working with networking organisations, such as Brains Eden and Creative Cambridgeshire, helps grow the community and create new opportunities, such as local internships and job offers. It's important to do this in rapidly growing areas like Cambridge, which are able to support this."

ARM's Laura Mengot Chapa points to the world-famous university as another crucial factor: "Universities are centres of knowledge, always buzzing with creative and greatly intelligent people. It would be a wasted opportunity not to set up a firm at the doors of a university, as it is the best way to access top graduates and help them start their careers."

Holland concludes: "Cambridge has an ideal confluence of people and organisations who make Brains Eden possible. It wouldn't happen without the vision and drive of Games Eden, Creative Front and Anglia Ruskin, but it wouldn't have such value for students without the local games studios."

REGION SPOTLIGHT: CAMBRIDGE

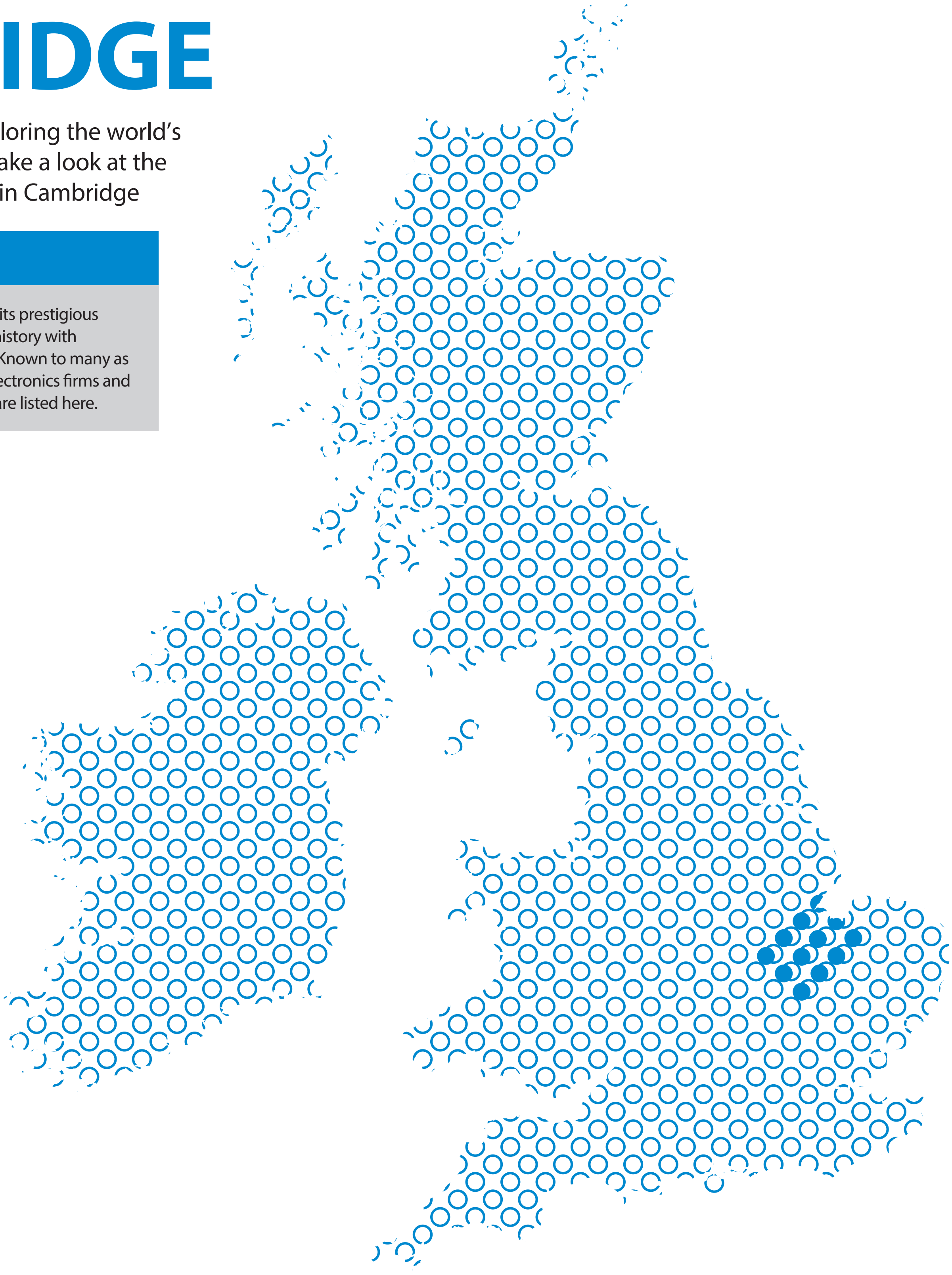
In the first of our new series exploring the world's games development hubs, we take a look at the studios and service firms found in Cambridge

AT A GLANCE

Cambridge is famous around the world for its prestigious universities, but it also has a long-running history with technology, communications and science. Known to many as Silicon Fen, the city is home to countless electronics firms and games studios, the most notable of which are listed here.

GAMES STUDIOS

- **Frontier Developments:** *Elite: Dangerous*, *ScreamRide*, *Zoo Tycoon*
- **Guerrilla Cambridge:** Sony-owned studio behind *Killzone: Mercenary*, *LittleBigPlanet* (PSP) and *Medieval*
- **Ninja Theory:** Creators of *Heavenly Sword*, *DmC*, *Enslaved* and *Hellblade*
- **Jagex:** MMO dev behind *RuneScape* and *Block N Load*
- **Gameware Europe:** *James Pond*, *Creatures*, *Creebies*, *Bamzooki*
- **Inkle:** Indie studio that created the acclaimed *80 Days*
- **Blue Omega Games:** Flash and Facebook games developers
- **Jumped Up Games:** Currently developing educational and iPad games
- **Inertia Game Studio:** Developer of *Fishing World*, *Jigsaw World* and *Mahjong: The Secret Garden*
- **OsoSim:** A learning and simulation company
- **Utopian World Of Sandwiches:** Indie duo that created *Chompy Chomp Chomp*



UNIVERSITIES OFFERING GAME DESIGN AND RELATED COURSES

- University of Cambridge
- Anglia Ruskin University
- University of East Anglia
- University of Bedfordshire
- Norwich University of the Arts
- University of Essex
- University of Hertfordshire

GAMES SERVICES AND RELATED FIRMS

- **ARM**: Leading microprocessor firm
- **Broadcom**: Wireless and broadband communication business
- **Geometrics**: ARM-owned creators of lighting tool Enlighten
- **Microsoft Research**: R&D team behind Kinect's body part recognition and skeleton-tracking
- **Quixant**: Manufacturers of high-performance gaming PCs
- **Universally Speaking**: QA & Localisation
- **Unity Technologies**: Creators of the widely used Unity engine

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BILLION DOLLAR BABIES:
Sierra's Loya (far left) and Marshall (left) are bringing back Geometry Wars this year
It would be a miss if we didn't look at the indie movement
MacLean Marshall, Sierra

devs with the right ideas – whether that is bringing back an old Sierra IP or something entirely new."

Senior director of external development Bob Loya added: "We wanted to do this stuff for a long time, and unfortunately there wasn't a path in Activision to do it because we were focused on the big blockbusters.

"With digitally distributed games becoming bigger every year, we were able to make a compelling business argument that we could be financially successful doing this, while working with really cool indie talent on great IP."

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#DEVELOPJOBS

Your monthly guide to the best career opportunities in games development worldwide

MOVERS AND SHAKERS

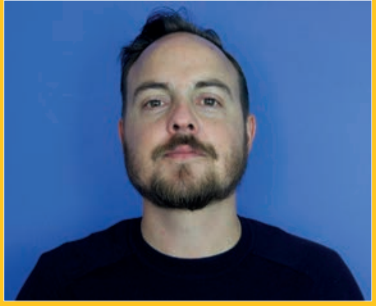
Bigpoint makes a series of hires, including a new creative director

P34

RECRUITER HOT SEAT

Digit Game Studios COO David McGovern on the firm's hiring spree

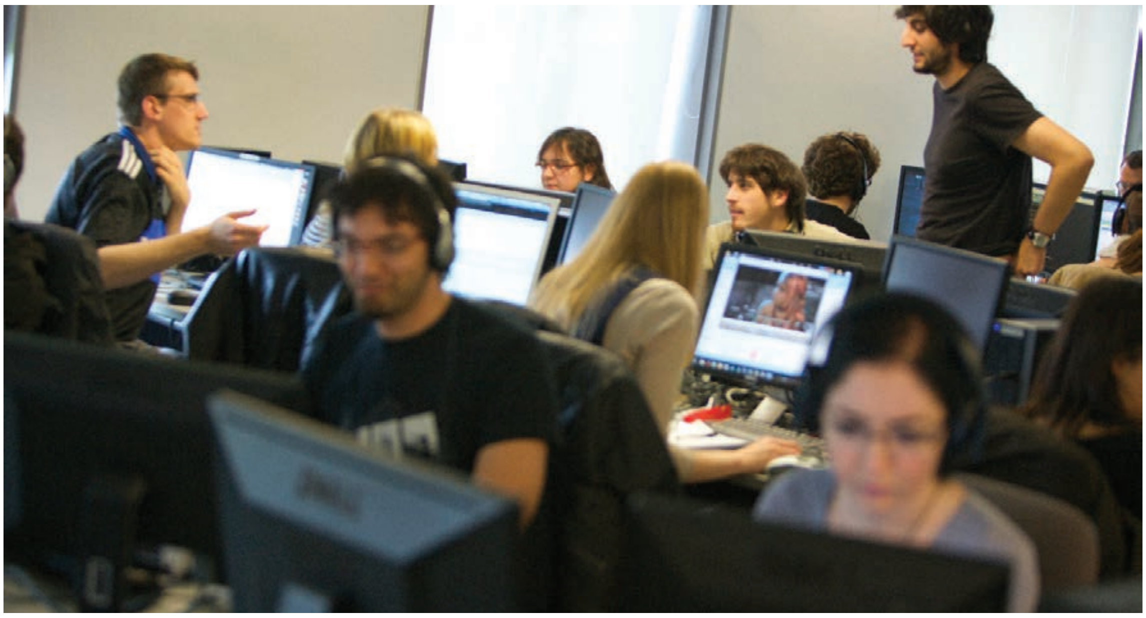
P35



GET THAT JOB

Creative Assembly's Kevin Griffith dishes out tips on obtaining a career in games art

P36



The games industry needs apprenticeships

A combination of university courses and unpaid work is how most think you might have got into games development. But Creative Skillset says that the tiny number of apprenticeships on offer to aspiring industry professionals needs to grow to give burgeoning coding talent another route into the sector

By Alex Calvin

Much has been done to get courses pertaining to the games industry into our universities.

But according to Kion Ahadi, head of Research and Evaluation at Creative Skillset, apprenticeships might be a better alternative to learning to code on an expensive university course.

According to the recent Creative Media Workforce Survey, only one per cent of the creative media industries have done an apprenticeship. Compared to the 86 per cent of the games industry that holds a degree, this is a tiny figure.

"We'd like to see more apprenticeships coming up, especially in games when it's a very small, non-existent area," says Ahadi.

"Apprenticeships are one way to learn, and with tuition fees in England rising, degrees may become more unattractive in the future to young people."

But why are there so few apprenticeships for games in the UK?

"Apprenticeships just haven't been seen as a route into the creative industries as opposed to something like the automotive industries," states Ahadi.

"In my view, because of the nature of the industry and all the technical skills you need I would have thought that apprenticeships, if developed in the correct way, could be vey attractive.

> *One reason we discourage unpaid work is that it's a barrier to diversity.*
>
> Kion Ahadi, Creative Skillset

"They can earn as they learn, develop new the skills, and have a job rather than having to unpaid experience and trying to prove yourself through that route and coming out with a load of debt from doing the degree as well as living costs."

And of course, they are a sound alternative to the unpaid work that many feel they have to do to learn the necessary skills to gain work in the games industry when they are starting out.

"Unpaid work shouldn't be encouraged across the creative media industries," Ahadi insists. "There's a lot of demand for our industries, so sometimes they're prepared to not be paid to get the experience they need. One of the many reasons we discourage that is that it's a barrier to diversity. Some people from lower economic backgrounds might not be able to afford to not be paid in their first job entering the industry because of the prevalance of unpaid work."

Ahadi adds that one finding from Creative Skillset's recent report is that 14 per cent of respondents in creative media attended a fee-paying school, compared to seven per cent of the rest of the economy, painting a potential issue that he explains could limit the core of talent. ■

MOVERS AND SHAKERS

This month: Pole to Win, Bigpoint, Payload Studios, Curve Digital and Ripstone

DEVELOP'S BOUCHER JOINS POLE TO WIN

POLE TO WIN ■ *Develop* sales manager **ALEX BOUCHER** has moved to QA and localisation firm Pole to WIn.

He joins Pole to Win as European sales manager. Boucher spent five years at *Develop*, and rose to the position of group sales manager for NewBay Media's games portfolio, also looking after *Develop*'s sister-title *MCV*.

Prior to working at NewBay Media, Boucher held sales roles at a number of media publications, including The Independent, Target Publishing and Bauer Media.

> ***"Pole to Win is going from strength to strength right now, and I'm thrilled to join the team at such an exciting time."***
>
> Alex Boucher, Pole to Win

"Pole to Win is currently going from strength to strength right now, and I'm thrilled to join the team at such an exciting time," said Boucher. "Our services are second to none. I can't wait to start promoting what we do and to ultimately help the games industry make better games."

Becky Walker, VP of European sales, added: "These are exciting times for Pole To Win as we continue to expand. Alex will be a valuable addition to our team. He brings with him knowledge and a passion for the games industry." ■

BIGPOINT ■ The online games company has made a number of new hires.

BRIAN MORRISROE joins as creative director with 17 years of games industry experience. He spent six years at Blizzard, working as art lead on *World of Warcraft* and art director for *Diablo III*.

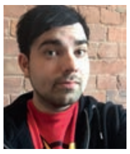
Meanwhile while **JULIEN PROUX** arrives as director of art. He joins having most recently helped Activision set up shop in China and previously worked on *Assassin's Creed* in Singapore.

Rounding off the hires is **FRANCIS COULON** who takes on the role of director of production for Bigpoint's Lyon studio. ■

PAYLOAD STUDIOS ■ The *TerraTech* developer has hired **JASON HOWARD** as an art director.

He comes on board having spent two years working in the same role at Headstrong Games where he worked on *Art Academy Sketchpad* and *Pokémon Art Academy*. Prior to that he held game artist roles at Hothouse, Acclaim and Argonaut.

"We're excited to welcome Jason to the Payload team," said Payload founder Russ Clarke. "An Art Director is a key role for any project but to attract someone with Jason's skills and experience says a lot about how far we've come as a studio. ■



CURVE DIGITAL ■ The indie publisher has hired UKIE's **RICHIE ENTICKNAP** as PR manager.

Enticknap had worked at the UK trade body since June 2013, having previously spent six months as a PR intern at UKIE.

"We're very happy to welcome Richie to the publishing team here at Curve Digital," Curve senior marketing manager Rob Clarke said. "His experience working with a wide range of different developers will be invaluable as we continue to expand our indie catalogue."

Enticknap added: "I am really excited to be joining the rest of the fantastic team at Curve." ■

RIPSTONE ■ **MICHELLE TURNER** has been promoted to global head of PR and marketing at the publisher.

Turner joined Ripstone in 2012 as global PR and marketing manager. Her previous work in the games industry involved a year-long stint as European PR and events executive at Disney Interactive Studios.

"I am delighted to have been promoted to head of marketing & PR at Ripstone," Turner said. "It's a privilege to be able to work in an industry I love, and in a company I love; I'm grateful to Ripstone for providing me with the support I've had over the past three and a half years. ■

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Stick Cricket developer Stick Sports has offices in Shoreditch, London and Sydney, with relations allegedly becoming strained during the Ashes Cricket tournament.

STICK SPORTS

RECRUITER **HOT** SEAT

Digit co-founder and COO **David McGovern** on getting a job at the ambitious Dublin-based mobile studio

BIO
Name: David McGovern
Title: Chief operating officer
Company: Digit Game Studios Ltd
Location: Dublin, Ireland
Hiring: 40 people across all aspects of games development, from technology and art, through to game design, UI/UX, audio, FX and production
Where to apply: www.digitgaming.com/careers

> ***“Include a great cover letter that tells us why games is your passion.”***

What differentiates your studio from other developers?
Lots of studios are different from one another. We like to focus on what we can do to make Digit a great place to work. That comes down to hiring amazing people so we are always learning from each other, giving people a work environment which is comfortable, fun and different, being located in a city which is young, vibrant and exciting and making sure we work on really incredible projects. We will be working on a massive triple-A IP, due for release in 2016, which will be one of the biggest mobile game launches of that year.

How many staff are you looking to take on?
Initially we are looking to triple the size of the studio, by bringing in 40 new hires.

What perks are available to working at your studio?
A great location, working right in the centre of Dublin City. We work in an 18th century former grain store that we have transformed into a cutting edge studio. A fully kitted out relaxation area with pool, games, great coffee, food, books and whatever else people enjoy doing to take a break. Then the usual stuff like great salaries, private healthcare cover, personal training budgets, great company events, etcetera.

What should aspiring devs do with their CV to get an interview?
Read the job specs and ensure your CV covers the various areas. If you have any examples of your work then please make sure you include those too, and include a great cover letter that tells us why working in games is your passion and why Digit would be the perfect fit for you.

Who is the best interviewee you have ever had and how did they impress you?
Anyone who can display their passion for creating games, and back that up with the proven experience of excelling in their previous jobs will do very well with us. People are always nervous during interviews, but we find those who really are passionate about something very quickly shed those nerves when they talk to us. This is because they realise very quickly that we are similar; we all love making amazing games.

And who was the worst?
The person who couldn’t tell us a single thing about Digit or our games. Doing your research is very important, as it not only shows you are really passionate about the job, but that you took the time to really understand what Digit and our games are about.

What advice would you give for a successful interview?
If you get to an interview, chances are you have the experience to do the job well. The interview is all about a personal relationship forming in the short time available.

Those who impressed us the most are those who can display the breadth of their experience and knowledge easily, demonstrate the impact they had in each of their previous roles and at the same time display the passion they have for making games with us.

If you have recruited internationally, what is the process like?
We take a very hands on approach to ensure any relocation is as smooth and easy as possible. We help with relocation costs, ensuring all the relevant documentation is available, give advice on places to live and help with initial accommodation needs. And we make sure that the actual move itself is a stress free as we can.

We already have a very international team in Digit, and one of the reasons for this is that we make the whole process of relocation as easy as possible.

How have your recruitment needs changed at your studio?
With this new recruitment drive we are seeing a shift internally to more 3D and effects-based roles. This is a reflection on how mobile games have advanced so much in the past few years. We need to be competing and surpassing the best games out there, and to do that we need to make games that not only are fun and exciting to play, but look, sound and perform incredibly.

Why should developers join you when indie and self-publishing have become so much more accessible?
Self-publishing and Indie development has exploded recently, which is fantastic for the industry as a whole. The major drawback is stability and knowing where you will be in a couple of years time.

We like to try and encourage that continued passion for making games, and being creative, but in a studio that is well funded and stable. And where you will be collaborating with some of the best developers in the world, working on some of the biggest titles in the mobile space and where you will be learning almost every single day. ■

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GET THAT JOB

Development specialists offer advice on how you can bag that career leap

THIS MONTH: SENIOR ENVIRONMENT ARTIST, WITH CA'S KEVIN GRIFFITH

What is your job role?
Senior Environment Artist on *Total War.*

What qualifications and/or experience do you need?
Qualifications for Senior Artists will certainly vary with different studios. A senior should be someone who can work independently, submit high quality work on a consistent basis, and act as mentor along the way. I've been very fortunate to have worked alongside many talented people on a variety of projects throughout my art career; the ability to learn from those experiences and to be able to share that with others is something I really am passionate about.

How would someone come to be in your position?
Someone can either be promoted from within the studio or be hired based on their experience at other studios. Experience and skill comes with working in the industry over time. From my experience, artists are hired for what they bring to that particular art positon, whether it be technical, artistic or leadership capabilities. Those qualities will be weighed especially when you apply for a senior position, whether you're moving within your development team or to another studio's art department.

What opportunities are there for career progression?
The opportunity to grow to the next level depends on a variety of factors, e.g. the needs of your own team, department, studio or the wider games industry; the changing and evolving landscape of games makes new opportunities. The best advice I have is to work hard and smart and to keep your focus. If you enjoy what you're doing and you're willing to learn, your passion will certainly get you to where you want to be. ■

If you've got job advice to share, email **acalvin@nbmedia.com**

Employee HOT SEAT

The head of Goodgame's casual studio **Daniel Persson** discusses his role at the educational outfit

What do you do at the studio?
I am the head of studio for casual. In my role I am currently starting up a new studio at Goodgame which focuses on casual games.

That's a completely new genre for the company. We will be launching our first product this year, which will combine popular elements of the casual game genre in an unprecedented way and will be available as an app for smartphones and tablets, as well as on Facebook.

How did you get your current job?
I got my job by talking to the company's management who introduced me to the studio and made a very positive impression on me. In that meeting I immediately connected with them, and such connections with people are very important to me. I also got a very positive vibe from Goodgame Studios as an organisation, and felt it would be the right place for me. The company culture was a perfect fit for me, which is why I chose to work here.

> ***"We have small sub-teams, which means that everyone is important."***

What perks are available to those working at the studio?
One very big asset of working in my studio, and a very big focus for myself, is that we give a lot of responsibility and ownership to each person working on the product. That is also why it is so important to recruit the right people, not only from a skills perspective, but also regarding the cultural fit. We have small sub-teams, which means that every single person is important and that we really want everyone to perform to the best of their abilities.

Another very cool thing at Goodgame Studios is that we have our very own Feelgood Team which is in charge of everyone's well-being. That is something that I believe to be quite unique for an organisation. For international employees we also have a special Onboarding Team that helps with anything that has to do with moving to and settling in a new country.

On top of that we get to enjoy more benefits such as a very diverse sports and recreational programmes, meals on campus, soft drinks and beer from 6pm and more.

What is the recruitment process like at your studio?
It is all about finding the right talent, which we are doing in many different ways. We very much like recruiting from our own network, of course. The games industry is such a small world and if I have worked well with someone in the past or if someone has a recommendation then I really like to get these people on board. We also have a proactive and resourceful HR team who reach out to outstanding talent all over the world. When choosing people, what matters most to us is their skill fit and also their cultural fit.

What was your own interview like?
The interview was very friendly and relaxed. As mentioned, I liked the people as well as the company from the very first moment. When they offered me an exciting job that fit my own expectations and passions perfectly, the decision was an easy one to make.

Name: Daniel Persson
Title: Head of Studio – Casual
Developer: Goodgame Studios
www.goodgamestudios.com

SKILLS AND TRAINING

This month: University of Westminster

University of Westminster
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UK

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E: psarroa@westminster.ac.uk
W: www.westminster.ac.uk

The University of Westminster houses its own programming and project labs, as well as a Vicon mo-cap facility accessible to games students

SITUATED RIGHT AT the centre of London, the University of Westminster runs a British Computer Society-accredited BSc Honours in Computer Games Development.

The course covers the major technical aspects of games development, from design through to production. It covers areas such as object-oriented programming, applied maths, computer graphics, AI and game engine architecture.

Senior lecturer for Computer Science Li Jin states he wants students to be educated with a broad range of knowledge and skills, including mobile and web application development, 3D modelling and animation, and human computer interaction.

> ***"To enhance employability, the course offers talks from the creative industry."***
>
> Li Jin, UoW

During the first year students are taught a broad foundation to computer science, while the second and third years introduce specific modules in relation to technologies used in gaming.

"This course will prepare students for work in an increasingly challenging and rewarding field by giving students a clear perspective of the current nature and practice of games development," says Jin.

"Students will be equipped with the required technical and creative skills for the new era of games developers. Students are expected to gain a thorough knowledge of programming, computer graphics, games design and project management, together with an appreciation of the industrial environment."

Students have access to game programming and project labs equipped with a variety of the latest hardware available, from PS4 and Xbox One to the Oculus Rift DK2. A Vicon motion capture facility, meanwhile, is also available to support students' games development projects.

Tools available to pupils include Unreal Engine 4, Unity 5, MonoGame, Marmalade, Maya and 3ds Max.

With all this software and technology available, Jin says that students will work on games throughout their time on the course, often in groups.

"Game group projects utilise aspects of all the other core taught modules within the relevant level," he explains. "The students in their project work are expected to develop a game project. The completed games will be evaluated and selected for publication by BUGS (the Business and University Games Syndicate), which acts as an interface between universities and the UK games industry with the aims to improve the quality of UK gaming graduates."

The university also has a number of close links to the games companies and other related industries in London, including Marmalade, Microsoft, Tower Studios, and We R Interactive, and encourages students to take industry work experience when the opportunity arises.

"In order to enhance student employability, the course offers a number of talks from the creative industry and supports students to participate in prestige gaming competitions and digital fairs as well as seeking industrial placements and internships," says Jin. ■

INFO

Courses: Computer Games Development (BSc)

Country: United Kingdom

Founded: 1838

Staff: Li Jin (Course Leader), Markos Mentzelopoulos (Senior Lecturer), Natasha Angelopoulou (Senior Lecturer), Alexander Bolotov (Principal Lecturer), Jeffrey Ferguson (Lecturer), Vassilis Kodogiannis (Reader), Jon Hare (Visiting lecturer)

Alumni: John Dunlop (King), Darasimi Makinde (Marmalade), Khaleel Mustafa (Two Way Media)

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Giving your game its voice

Dialogue can bring many video games and their characters to life, but audio experts warn this involves more than just shoving an actor into a recording booth. **James Batchelor** finds out more about the process

IT CAN'T HAVE escaped anyone's notice that there's a lot of talking in games now. Over time, the medium's narrative scope has evolved beyond "Thank you Mario, but our princess is in another castle" to *The Witcher 3*'s 450,000-word script.

Increasingly, having these colossal scripts fully voice acted – or close enough – has become the norm. Organising this is a Herculean task in itself, but one that definitely pays off, providing it is approached as early and efficiently as possible.

"Begin thinking about dialogue sooner rather than later – don't think of it in any sense as a last minute bolt-on," explains John Broomhall, the driving force behind Develop: Brighton's Audio track.

"In the really bad old days, examples of 'cheesy' speech abounded and oh, how we laughed. And cringed. But now, as an industry we expect dialogue to be both creatively and technically of a very high quality. In terms of credible performance, there's no looking back for certain game genres."

93 Steps' co-founder Francesco Libralon agrees: "Voiceover production is an important part of whole audio process, no less important than the soundtrack or sound effects. We started to produce voiceovers because it is linked closer to music and effects than people imagine – all of them have to reflect the taste we have decided to maintain for the game.

"This applies to the technical aspects, too. If the sound effects will be huge and full of bass frequencies, we will factor this into any decision relating the voiceovers and the soundtracks."

Above: 93 Steps' Francesco Libralon says dialogue is as important in games development as sound effects and music

Main: Actress Alix Wilton-Regan has starred in a series of games, such as Dragon Age and Sacred

DEVELOP'S TOP TIPS
Sound design experts share their secrets
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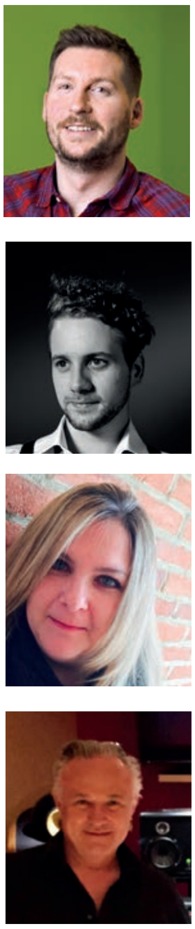
KEY RELEASE
We take a closer look at new audio tool Elias
P44

UNREAL DIARIES
Epic Games turns to architecture to show off UE4
P47



Top to bottom: Side's Andy Emery, 93 Steps' Lorenzo Scagnolari, Soundcuts' Adele Cutting and OMUK's Mark Estdale

Dialogue starts, obviously, with the words. Care must be taken with the script – and Soundcuts boss Adele Cutting advises that all studios should hire or appoint a script writer.

"Just because you can write, doesn't mean you can write a script – it's a skill," she says. "Even if it's a simple script, I'd suggest having someone look at it in an editing capacity.

"For a larger game, with backstories and lots of NPC dialogue, an experienced script writer is a must as they understand how dialogue can help game flow and gameplay. They know all the information that the script has to convey, and can do it in a natural way.

"If you have a bad script, you can employ the greatest actor in the world, the best studio, but it will still sound ropey – and the audio will be blamed."

THE SCRIPT

Casting is also an important consideration – you need the right voices to bring your words to life. OMUK CEO Mark Estdale advises that studios "cast early and record as late as you possibly can".

"Once the character has a voice, it will influence the writing style, the animation and the end result," he explains. "Casting late can be hell, as you are competing against the imaginary voices in the heads of the dev team. Recording late will mean you have more game assets at your disposal to help immerse the actor during recording."

Side MD and co-founder Andy Emery adds: "A good character description helps the casting director look for the best options. Character art is always very helpful, while the description should give – at a minimum – age and accent. But don't get too specific with accents if you don't have to. Is it important or just a writer's whim?

"A good audition script is also important. Ensure it's delivering the character traits you're looking for, so you can get the best out of the auditions. If the character goes through a major change in attitude or emotion, the script should cover that."

IMPROVED PERFORMANCES

Audio expert John Broomhall says it is also important to secure a good director, due to their specialist skillset and experience with getting the best performances from actors.

"I've heard horror stories of famous – and expensive – actors doing an awful job on games, due to poor, inexperienced or overly deferential direction," he says.

"A skilled director guides, inspires and focuses. They know how to run sessions – when an actor is losing consistency or fatigued – as well as when to leave something problematic and move on, and when to come back to it, how to encourage, how to rein it in.

> ***"If you have a bad script, even the best actor sounds ropey – and the audio will be blamed."***
>
> Adele Cutting, Soundcuts

"You may only get one shot at it so get the dialogue team right. Poor dialogue perhaps more than any other area of audio can lead directly to damning reviews."

There are a number of things devs can do to help get the best performance out of their voice actors. Estdale says a good method is to give the cast visual and audio game assets as they're recording, so they can immerse themselves better in the game and the role.

"The biggest single factor which makes for poor dialogue in games is unclear locational context," he says. "Too loud? Too quiet? Wrong emotional weight and wrong emphasis? All of that will kill performance.

"Location is the toughest challenge for the actor. In most other media, location is known. Having to explain it to an actor is tedious; your objective should be to immerse the actor in your game's location without ambiguity. All your assets have value here: character, object and scene images, videos, ambient soundscapes, sound effects and music all can inform the moment and are as important as a character's momentum. So use those assets as much as you can."

THE PRICE OF QUALITY

Obviously, high-quality voice acting does not come cheap. Devs must be aware of the costs before factoring voiceovers into their game. This includes considering your budget and how many speaking characters you have.

"Each actor will need a per hour rate," says Cutting. "A rough guide for a non-famous actor would be around £250 per hour, but on top of this in most cases you'll have to pay a buyout figure, too – a one-off payment. Then there are studio costs and direction fees.

"You need to work out how many lines of dialogue there are. To roughly budget your session, you should think 50 lines per hour with a line roughly based on seven words. If you have a brilliant actor who really embodies the character, you can get through more."

Another budgetary consideration is whether or not you want to outsource the voiceovers or handle it in-house. But Libralon warns that if you do not have enough projects to justify building a decent studio, doing so will be "an enormous cost and ultimately a waste of manpower and money".

93 Steps co-founder Lorenzo Scagnolari says creating an in-house studio is possible, but there is a lot to take into consideration.

"One of the first things to keep in mind is that microphones can sound different when used on different people," he says.

"It's not true that a $1m mic will definitely sound amazing: you need to know the kind of voice you are going to record. It's always better if the VO artist will bring their own microphone with them for the recording session: they know their voice, so they'll probably have the right mic.

"If you are considering building a small recording room, you want to start with a good sound card. Pay attention to the analog/digital converters – don't save money on this piece of equipment as it's where most of the magic happens. For the microphone, go for a condenser – cardioid, large diaphragm type – with a reasonable frequency response and equipped with a good quality shock mount, plus a pop filter.

"The environment should be as quiet as possible, possibly adding a little bit of soundproofing or acoustic foam on the walls to reduce reverberation."

But several of the experts we spoke to warned against investing in your own voiceover suite, with Estdale adding: "I know of developers who have spent millions on building recording studios that are plain silly and out of sync with their needs, and end up as sort of offices-cum-visitor attractions. No internal team will have the same level of expertise and experience as an external specialist."

TALK OF THE FUTURE

The evolution of voice acting in games is evident from any of the cinematic, triple-A blockbusters on shelves, but how can we expect requirements for this aspect of development to change in the coming years?

"The size of dialogue scripts today can be huge – and that means they need better management and better tools to keep everyone on track," says Emery.

"Characters and their stories are also getting more complex, requiring strong performances to match the narrative, plus good directors to get the performers to the right place.

> ***"Poor dialogue more than any other area of audio can lead directly to damning reviews."***
>
> John Broomhall, audio expert

"With an ever-increasing importance placed on character performances in games – and with some games now being completely narrative-driven – achieving fully immersive, three-dimensional performances is a key driver for change."

Estdale adds that even indie and smaller games are likely to test the limits of voice acting in games: "The internet has demystified the craft of delivering voice performances for games, so at the bottom end DIY will continue to grow and innovate.

"Meanwhile, at the top of the spectrum quality will continue to improve, probably inspired by the tiny indies that are daring to think differently.

"Games are radically different because of player choice, so this is still a new art form. Even though advances in the field are seen continually, in reality we're still pioneers on the frontier of a new universe. We're still at the beginning with story and narrative in gameplay, especially when you look at the challenge of making narrative work with VR. It's madly exciting." ■

GREAT SOUND: THE INEXPENSIVE MAGIC WEAPON

AUDIOKINETIC'S SIMON ASHBY DISCUSSES WHY INDIES AND SMALLER DEVELOPERS SHOULD AIM FOR HIGH QUALITY IN ALL FORMS OF THEIR AUDIO

Coppola, Spielberg, Lucas and other film directors have said that "the sound and music are 50 per cent of the entertainment in a movie". Can we say the same for games?

New developers don't always realise how much cheaper it is to produce a high quality soundscape compared to any other aspects of games such as physics, graphics, AI, or gameplay. With experience, games developers will soon discover how well-produced dynamic audio does not only enhance the overall game experience, but is also often a cure for repetitive gameplay or average graphics.

Implementing interactive music to punctuate the core gameplay mechanics and to add dynamism, or using dynamic mixing rules to strengthen the game feedback and reward systems by setting the focus on the most important actions are just a couple of the available tools that a professional sound engine like Wwise provides and that can be kept at the ready to enhance your existing gameplay and graphics.

Wwise comes in a variety of licensing options from free, to royalty-based to tier-based on development budget – so it's easy to fit Wwise under two per cent of a game's budget.

Is audio 50 per cent of the game experience? Let's leave the debate for another article. But, as true as it is for films, high quality audio production for games represents a minor portion of the overall budget, but its return on investment to the game experience is undeniably larger.

Make it your magic weapon, from indie to triple-A games, it's definitely more affordable than you may think, and your players will thank you for it.

Simon Ashby is VP of products and co-founder at Audiokinetic. He is responsible for the product development of Wwise, now used by more than 500 games. Prior to Audiokinetic, Ashby worked as a sound and game designer on several titles.

DEVELOP'S TOP TIPS:

SOUND DESIGN

We asked audio experts from leading studios and services firms for their advice on ensuring your game sounds as good as it looks

John Broomhall, Game Music Connect co-founder, audio specialist and composer
Involve audio early in your project. It really can provide massive 'bang for buck' in enhancing the overall gaming experience and perceived quality of your title – but audio creatives can contribute best when they're in at the top collaborating and sparking off inspiration within the team.

Ed Walker, sound engineer and director, Sounding Sweet
Audiovisual synchronisation is sometimes overlooked. Most DAWs (Digital Audio Workstations) are capable of setting a 'Video Sync Offset' to ensure that video playback is synchronised with the audio. Save time and money by making sure this is calibrated correctly before starting any ADR, Foley or cutscene sound work.

Francesco Libralon, co-founder, composer and audio director, 93 Steps:
When I choose the genre and the style of soundtracks and sound effects, I pay attention to frequencies – they don't have to fight one another. Limiting the number of identical sound effects can be useful, too; more identical sound effects at the same time give more volume to the corresponding frequencies.

Peter Hanson, sound designer, Pinewood Studios

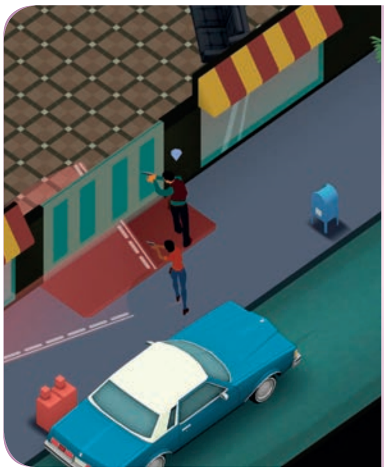
- When I'm in a creative flow, I don't like to break it to perform rudimentary technical tasks, so I do most of this before I start: plug in your outboard, power up synths, spin up hard drives, label your i/os, name your busses, insert some generic returns you can send to quickly, and so on. Make your working environment as quick and easy as possible.

- If a brief seems overwhelmingly complicated, try to break it down into layers in your head. Add the layers you can and listen to what's missing, the solution often presents itself.

- Don't smash it with an L1 to make it full scale. Film, TV and games all have some kind of loudness standard – ask yourself if it needs to be this loud. Don't get me wrong, I love an L1 but be aware of robbing yourself of transients and dynamics.

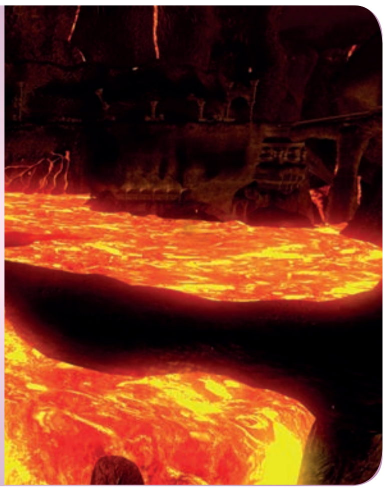
- Get as many libraries as you can but remember most people already have them. If you want unique sounds, go record them.

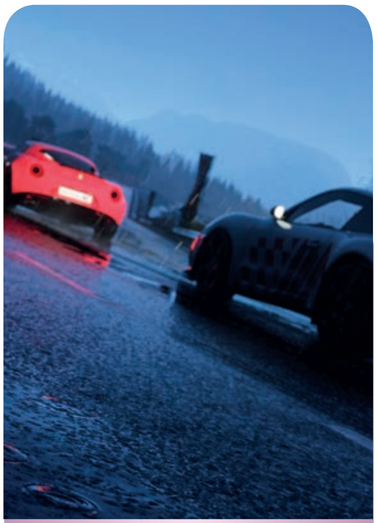
- Don't be afraid to start over. If you haven't gotten anywhere with an idea after 30 minutes, ditch it!



Christopher Randle, freelance sound designer
The perceived width of a sound diminishes as the source gets further away. Adding a rolloff to the spread parameter in Unity's 3D sound settings can imitate this with stereo audio. This is especially useful for large objects and sounds that contain a lot of spatial information, like gunshots.

Haydn Payne, sound designer, Creative Assembly
My method for recording thick gloopy lava bubbling sounds without visiting a volcano is to make a really large batch of porridge or wallpaper paste in a plastic container, stick a hollow tube into it, and blow through it. Easy, cheap, and safe enough to do in a studio if you're careful.





Stafford Bawler, freelance audio expert behind Monument Valley:
A way to make your UI/audio HUD sound effects and music tracks sit neatly in a game mix is by widening their stereo field. This helps them sit in their own audio space, which is especially useful in a busy 3D action game such as a racer.

THE STUDIO HOT LIST RETURNS

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100

10TH ANNIVERSARY SPECIAL

Published November 2015

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SOFTWARE
Game Audio
eliassoftware.com

KEY RELEASE

Adapted sound

We look at the new audio tool suite from Elias Software that wants to change how composers and developers collaborate

The team at Elias Software (above) aims to make its tools available to developers of all sizes across all platforms

ELIAS SOFTWARE IS a new audio team in the industry that has been working on an adapted music rendering engine, named the Elias Engine.

It's been built to make the music follow the story of the game and adapt to a player's actions. Head of development Philip Bennefall explains: "We're trying to avoid the traditional crossfade approach as much as possible."

He says it's important that adaptive audio is musically accurate, rather than based purely on crossfades, and the tool suite has been developed with both composers and developers in mind.

Its set of tools consists of two parts, the Elias Engine, which is the runtime component that's the core of the package and is included in the game itself when distributed. Then there's the authoring tool, Elias Studio, where composers can arrange their music. It's a solution that Bennefall says is designed to offer a simplified workflow and be as easy as possible to use for all parties.

"As a composer making your music you will structure it in this tool," he explains. "So you pull all the different versions of the different tracks and that kind of thing to where they're supposed to go. And then when your work is done as a composer, you deliver a package to the developers, and that's basically it."

The adaptive music works by having a selection of different tracks, as you would in any audio workstation, with each of these tracks having a different version or variation to the original sound. The Elias Engine can then operate in a number of modes depending on the player's in-game activity. These can include 'objective', where the player is heading towards a definite goal, and 'exploration'.

"Exploration is when you're going through a vast area where it takes a long time, and you want the music to vary but you don't necessarily want it to vary in its perceived intensity," says Bennefall. "So you want it to be different so it doesn't get boring, but you don't want it to necessarily be perceived as different."

> ***We think every game should be able to have adaptive music, regardless of budget.***
> Philip Bennefall, Elias Software

The latest version of its Composer Studio, 1.5, features numerous improvements to clear up the tool's early "rough edges", and deals with some latency issues. Bennefall says the company is focusing on ensuring all the features currently included with the tool offer stability, rather than throwing in as many features as possible.

But perhaps a key feature of the tool is the ability to edit a project during the game, and then restart it with the changes implemented.

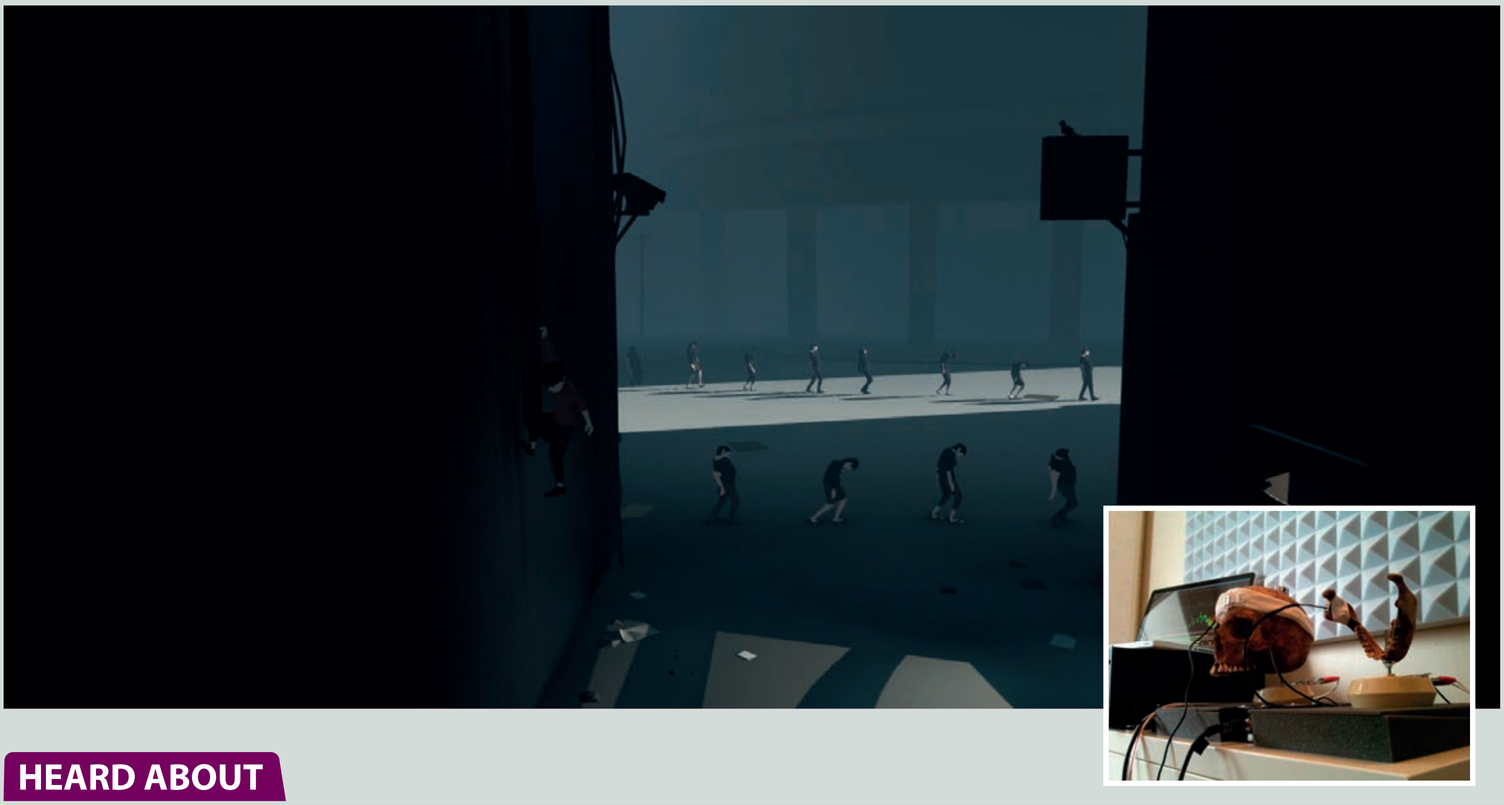
"There was no coding, nothing like that, because the studio exports an xml document that has all the details, and the engine reads that back in. It's super easy to update and work as you go."

Companies to have used Elias's tools early on include publisher Warner Bros for the Arrowhead-developed *Gauntlet*. But as CEO and head of music Kristofer Eng says, the firm tool suite isn't just aimed at large publishers, it is ideal for indies, too.

The company is in the midst of restructuring its licence terms as it looks to make the Elias Engine and Studio more appealing to developers of all sizes. For non-commercial and educational use, the tool is completely free.

"One of the main things about the Elias engine is it's supposed to be easy to use so that any developer should be able to implement it into a game without any hassle," says Bennefall.

"It's lightweight so it works on every platform as well, whether it's an iOS game, Android or PlayStation 4. Which was also very important because we think that every game should be able to have adaptive music in it, regardless of how big the budget or how advanced the game engine is." ■



HEARD ABOUT

Inside's sonic skulduggery

John Broomhall talks with Limbo's audio creator Martin Stig Andersen

How is the audio development for *Inside* characterised by a blurring of sound design and implementation?
One thing is to create great sounds. Another is to make them come alive in the game. Creating *Inside*'s character sounds often required an iterative process where we'd first go and make sound recordings, start developing an implementation strategy for them – and then, based on our learnings, go back and re-record in a way that would fit the implementation strategy.

The more the sounds are shaped by various game parameters, the more the game comes alive. We expanded that approach by feeding output from the sound back into the game. For example, the sound system for the boy's breathing features a real-time interpolation between the natural rhythms of breathing, ranging from relaxed to panic, extracted from actual sound recordings, so the rhythm of the boy's interactive movements – the rise and fall of their chest – is controlled by the 'breathing' audio data.

On a global level, a lot went into implementing custom sound transitions between death and respawn to maintain immersion through unloading/reloading. This is something I often miss in games: attention to the overall experience embracing death/respawn.

There's an intangible dynamic between real-world and game-world time. Even though my character dies and I go back in game-world time, real-world time still frames my experience, and I easily get annoyed hearing the same line or music cue over again as I die and respawn.

However, if I quit the game and get back to it after a few days I probably do want to hear them again. Making a distinction between load and respawn, and creating unique mix and music transitions for every situation is integral to *Inside*'s sound design.

You've had a deeper and longer involvement with *Inside* than with *Limbo*. What benefits has that provided?
It's allowed me to get at the core aesthetically and technically, doing things that are impossible to introduce later in the process. For example, prototyping gameplay where timing and mechanics are hooked on music or clock time, rather than the usual but much more unstable game-time, is great for tight integration between music and gameplay. But it's a technical challenge – you have to demonstrate it's worth the effort early on.

Early involvement means sound becomes part of the creative toolset in forming the game's structure, not a bolt-on. For sequences in which gameplay and sound played very well together but eventually became too repetitive sound-wise, I could suggest changes in the game's structure. That worked in reverse as well, with the team suggesting sound structure changes, enabling us to create coherent musical build-ups that encompass entire sections of the game.

Like *Limbo*, does *Inside* have an overall sonic identity?
Yes, but more subtle. It's the graininess of early 12-bit digital audio hardware like samplers and delays. By means of convolution, we're running an '80s (then) state-of-the art hardware reverb dynamically in-game, which really makes the audio elements meld together.

Aesthetically, I took inspiration from '80s B-movie horror – often featuring a synthesizer soundtrack, though I didn't want any synth per se, just a vague association. I'd already been playing around with a real human skull in order to create bone-conducted sound. I made a workflow of processing synth sounds through the skull using audio transducers and contact microphones, and then restoring them. The result has a sombre, chill quality, and as in the aforementioned film scores, haunting tones often contrast with something horrible taking place.

My goal is that, like a siren song, the gloomy, faint echoes of synths will coax the player forward – to whatever end. ■

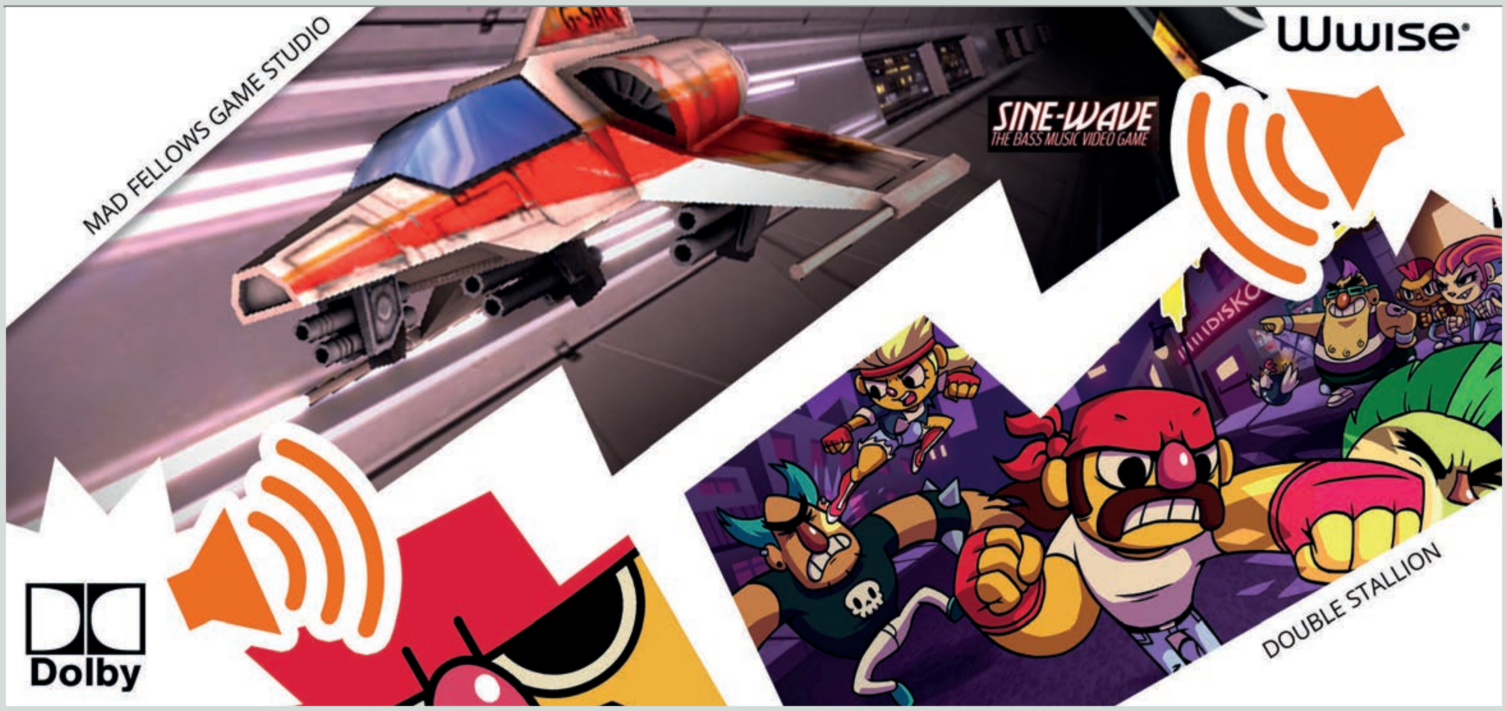
John Broomhall is a game audio specialist creating and directing music, sound and dialogue **www.johnbroomhall.co.uk**

Martin Stig Andersen (above) believes not enough attention is given to the sound effects around death and respawning

MADE WITH MARMALADE

Sounds easy

We take a look at how Marmalade works with audio experts to combine their leading tools



Audiokinetic's Mike Drummelsmith (top) and Dolby's Eric Ang (middle) are pleased to integrate their tools with Marmalade to the benefit of devs such as Mad Fellows' Paul Norris (bottom)

While much of the attention surrounding games today may go towards visuals, it's important not to neglect the audio.

This is something proved by UK studio Mad Fellows' sci-fi themed *SineWave*. Developed with Marmalade, the title adapts the music to fit the player's movements – something the studio is confident makes the title stand out.

"Games, as an industry, have pushed the boundaries of interactive sound design to a mind-boggling degree," says creative director Paul Norris.

"But the old cliché that sound designers are under appreciated is definitely justified. I think it's because the subtleties of the job are lost on most people."

Norris adds that he discovered sound design later on in his career and to him, the discipline "was a huge revelation".

"I've found audio can be much more powerful than visuals when communicating emotion and mood, and even physical concepts like a sense of scale, material, distance or even texture," he says.

"If you're in any doubt as to the power of audio, try watching a horror film on mute, then put on a blindfold and listen to just the sound."

Fortunately, Marmalade not only offers its own built-in audio tools, but also integrations with leading specialist software such as Wwise and Dolby.

"Marmalade is one of the best frameworks for mobile devs, so we felt it was natural to include our solution to maximise our audience reach," says Dolby's senior manager for developer programs Eric Ang.

"Mixing and editing the audio is only half of the equation – the content also needs to play back optimally. By using the Dolby Audio Plugin, end-users will receive the full audio benefit."

> ***"Games, as an industry, have pushed the boundaries of interactive sound design."***
>
> Paul Norris, Mad Fellows

Mike Drummelsmith, developer relations director at Wwise creator Audiokinetic adds: "Integrating Wwise into an SDK like Marmalade allows devs to use industry-standard tools and a high-performance audio engine with relative ease.

"When a developer chooses to use Marmalade, they'll first seek out technologies that already support the platform to upgrade their experience with it. If we're not there, more likely than not the devs would not think to seek us out."

The Wwise plugin was actually built by Double Stallion Games, the studio behind *Big Action Mega Fight*, which won best audio award at Casual Connect 2014.

Co-founder and CEO Dan Menard says: "We make use of a lot of Wwise features in *BAMF*. The music is entirely dynamic and made up of layered loops and melody sections, which prevents the music from getting repetitive. The randomisation features allow us to add voice-over lines without making them too overwhelming.

"We also wanted to keep *BAMF* under 50MB, and Wwise's compression features enabled us to do this. All the audio and music weighs in at only 20MB.

"Ultimately it is the creativity of your audio team that will ensure the game sounds great. Wwise just gets out of the way of that creativity. Our extension allows Wwise to work with Marmalade and unlock that creativity."

In that regard, Menard heartily recommends Marmalade users explore plugins for multiple aspects of games development. There's a rich ecosystem of integrations available and, being a low-level framework, Marmalade's flexible architecture means it's easier for devs to use these add-ons.

"Using existing libraries and middleware is important to keep development costs down, and we don't mind sharing these extensions with everyone," he says.

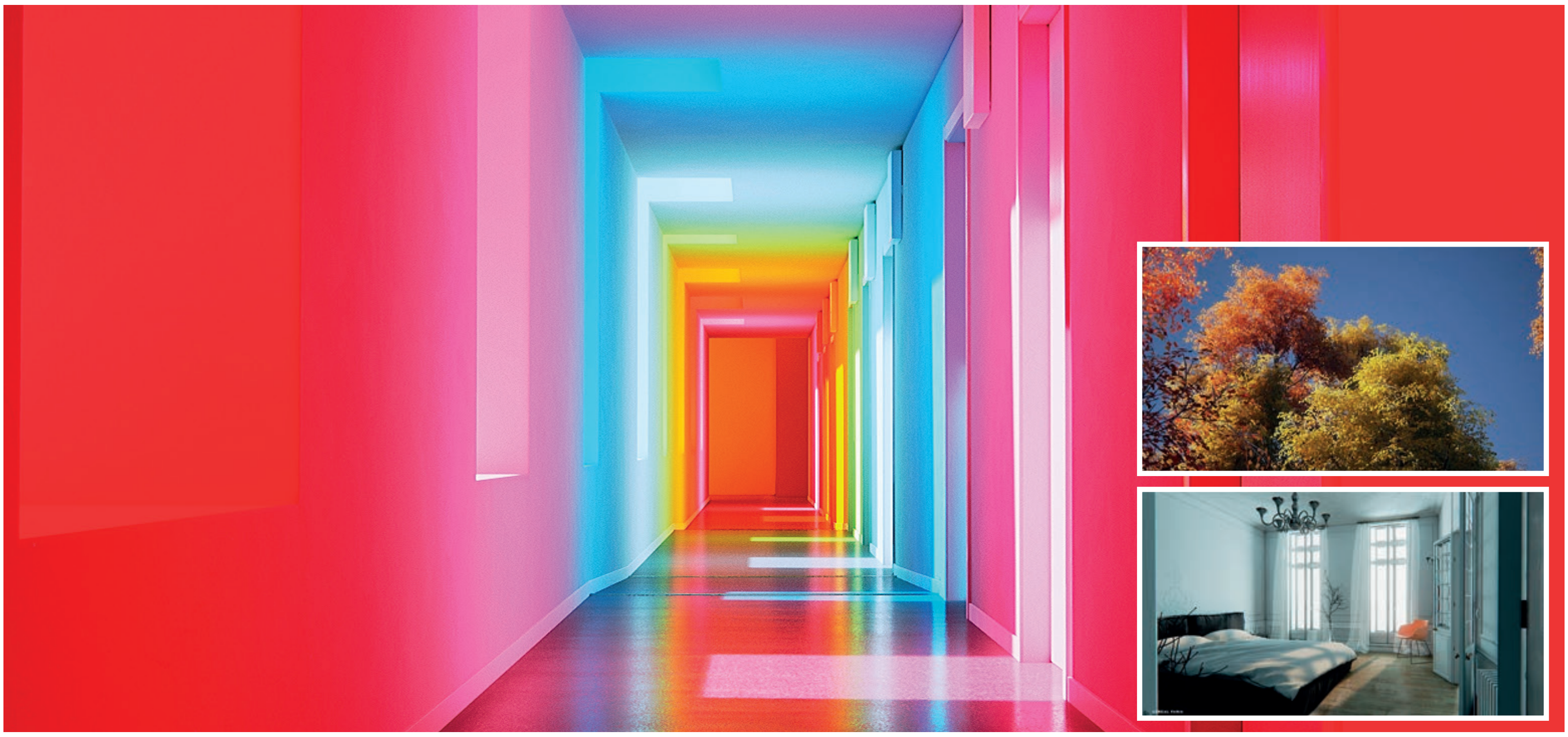
"It's important that the Marmalade community continues to share and improve these extensions to give devs more options." ■

www.madewithmarmalade.com

UNREAL DIARIES

Real-world rendering gets Unreal

Epic Games puts $60,000 towards a new design challenge that aims to explore the possibilities its widely-used engine affords for the realm of architectural visualisation



There are plenty of examples of UE4 being used to create realistic architecture and environments, such as UE4 Colors by Koola (main), UE4 SpeedTree by Koola (top), and Unreal Paris by Benoit Dereau (above)

The field of architectural visualisation presents a striking blend of both the pursuit of photorealism and the desire to create something artistic, inspiring, and entirely new.

Epic Games has partnered with Ronen Bekerman to energise a new chapter of real-time interactivity and rendering. Building on the success of five previous challenges hosted on the **Ronenbekerman.com** blog, the 2015 competition is themed 'The Vineyard', and developers are exclusively building their entries in Unreal Engine 4.

The contest runs June 15th to September 15th, with the winners to be announced during October's State of Art Academy in Venice.

Epic is contributing the largest cash prize pool in arch vis contest history, with over $60,000 in award money, including a $25,000 grand prize for group entrants, and $12,500 for individual entrants.

Bringing together games development and architectural rendering marks the unification of the two fields in a way that hasn't been seen before, encouraging a deep collaboration that will result in new achievements for all.

Bekerman says: "It is always my aim to host at least one major arch vis challenge per year, and I knew this one had to break new ground.

"The opportunity to bring real-time games technology to the world of architectural visualisation highlights not only the versatility of Unreal Engine, but also opens the door for a new concept of visualisation, where the use of interactive animations and immersive VR will be increasingly relevant."

The 'Vineyard' theme takes advantage of the power of Unreal Engine, namely for developers' ability to produce high-fidelity interior spaces and stunning outdoor vistas. Challengers are encouraged to think outside the box to interpret a modern vineyard setting of their own invention, and will be judged on categories such as lighting, design and interactivity. Experts from game, film and architecture will select winners.

"The use of UE4 in this brilliant challenge is yet another example of the technology moving outside of its original capacity and affecting an entire industry in a way no-one could have predicted," remarks Epic Games lead technical artist Wyeth Johnson.

"Our focus on building great tools is what makes this challenge possible. It also highlights a unique aspect of our real-time rendering technology: architectural scenes that used to be relegated to the still image are now capable of coming to life in interactive and responsive ways. We can't wait to see what the community does."

Official submissions will be accepted at **ronenbekerman.com**, with Epic support at **forums.unrealengine.com**. ■

> ***"The opportunity to bring games technology to the world of arch vis opens the door for a new concept of visualisation."***
>
> Ronen Bekerman

UPCOMING EPIC ATTENDED EVENTS

Develop: Brighton
July 14th to 16th
Brighton, England

GDC Europe & Gamescom
August 3rd to 9th
Cologne, Germany

SIGGRAPH
August 9th to 13th
Los Angeles, California

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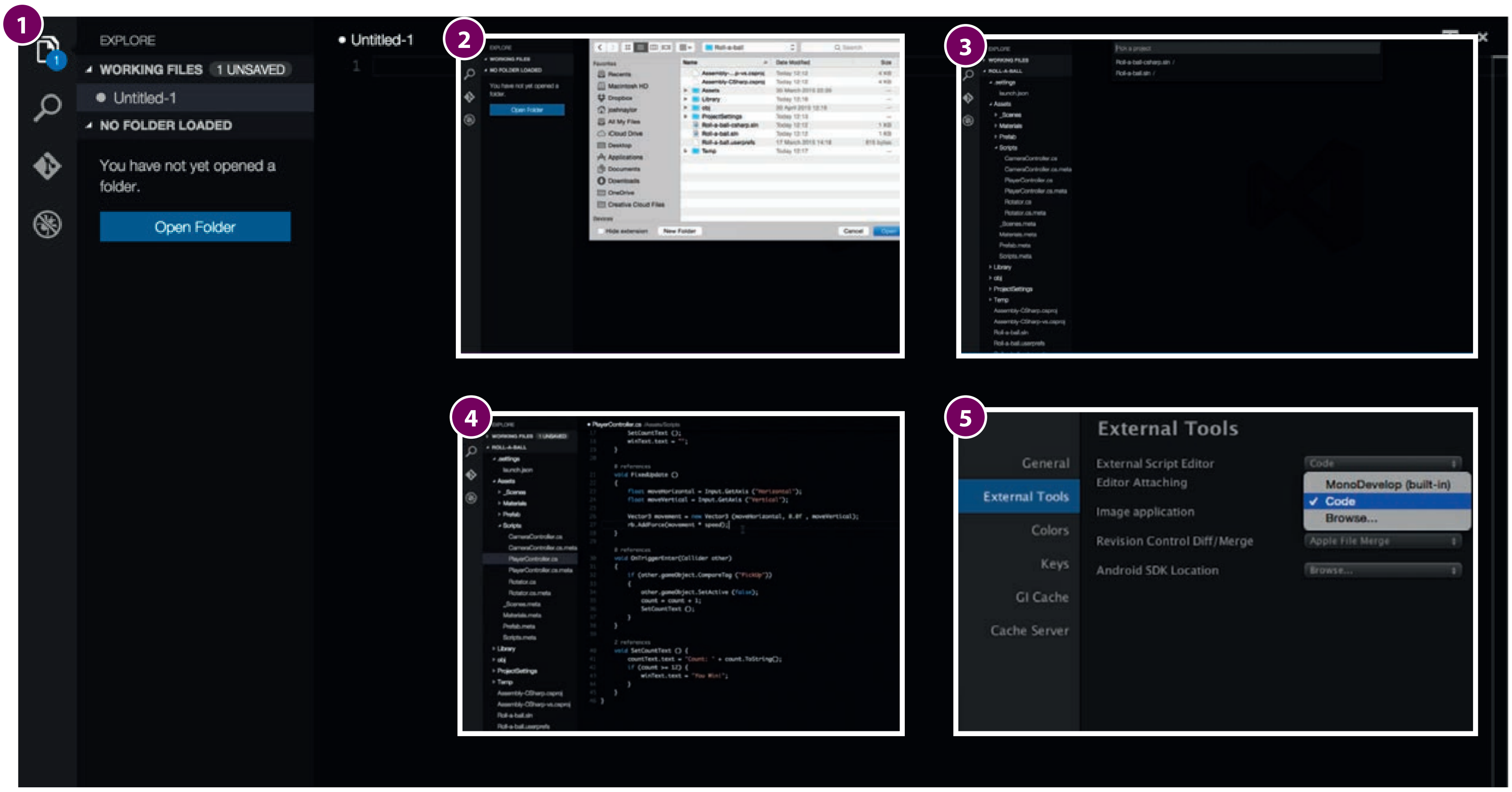
MICROSOFT SPOTLIGHT



Integrating Unity and Visual Studio Code

Unity's technical evangelist **Josh Naylor** explains how to integrate Microsoft's IDE with the popular engine

IT'S LONG BEEN a pain point when developing a Unity game: having to use MonoDevelop as the IDE. Originally I never thought it was that bad, but after using Unity VS with Visual Studio on my Desktop Windows PC, I realised it really is much greener on the other side.

However, there's one problem: I needed a Mac for work to support multiple platforms for demonstrations and to help developers with iOS games, and I didn't fancy booting into parallels every time just to use Visual Studio for everyday development.

Other packages such as Sublime are great but they lack IntelliSense – auto-completion – which for me really speeds up development time, especially when coding/demoing live in front of 100 people. I don't want to be stuck missing a capitalisation of some random rigid body for someone to have to point it out.

Anyway, I no longer have to endure MonoDevelop nor do I have to jump onto my desktop or parallels because Visual Studio Code is here. It's a lightweight version of the full Visual Studio with IntelliSense, debugging and Git integration, and it's available for PC, Mac and Linux. Wowzers, right?

It's also pretty damn sexy, with a similar style to Sublime.

For some reason, on the VS Code website it says it's for node.js and asp.net development – nothing about C# or integration with Unity. Which led a lot of people to ask: "When will it be integrated with Unity?" Well, great news: it already is.

I posted a few screenshots the day it was released on Twitter and the Unity3D sub-reddit and had a lot of responses asking how to do it, so here how you get it running:

1. Open Visual Studio Code
You can use VS code as a text editor – just as you would Sublime, Notepad, Notepad++ – by simply opening a .cs file for quick and easy editing, but I want to set it up with my full solution.

> **Packages such as Sublime are great but they lack IntelliSense, which speeds up development time.**

2. Open your Unity Project
You need to select the base project folder, just like you do when opening a full Unity project.

3. Select the correct Project
Your project will be in VS Code but you need to connect the correct solution file. On the bottom left, it'll show you how many different projects are available. You need the one that has "nameOfProject"-csharp.sln, rather than the one that shows "nameOfProject".sln.

4. Code and be happy
Locate your scripts and open one up. You should now have full auto completion, just like using Visual Studio or MonoDevelop. Good luck working on your projects.

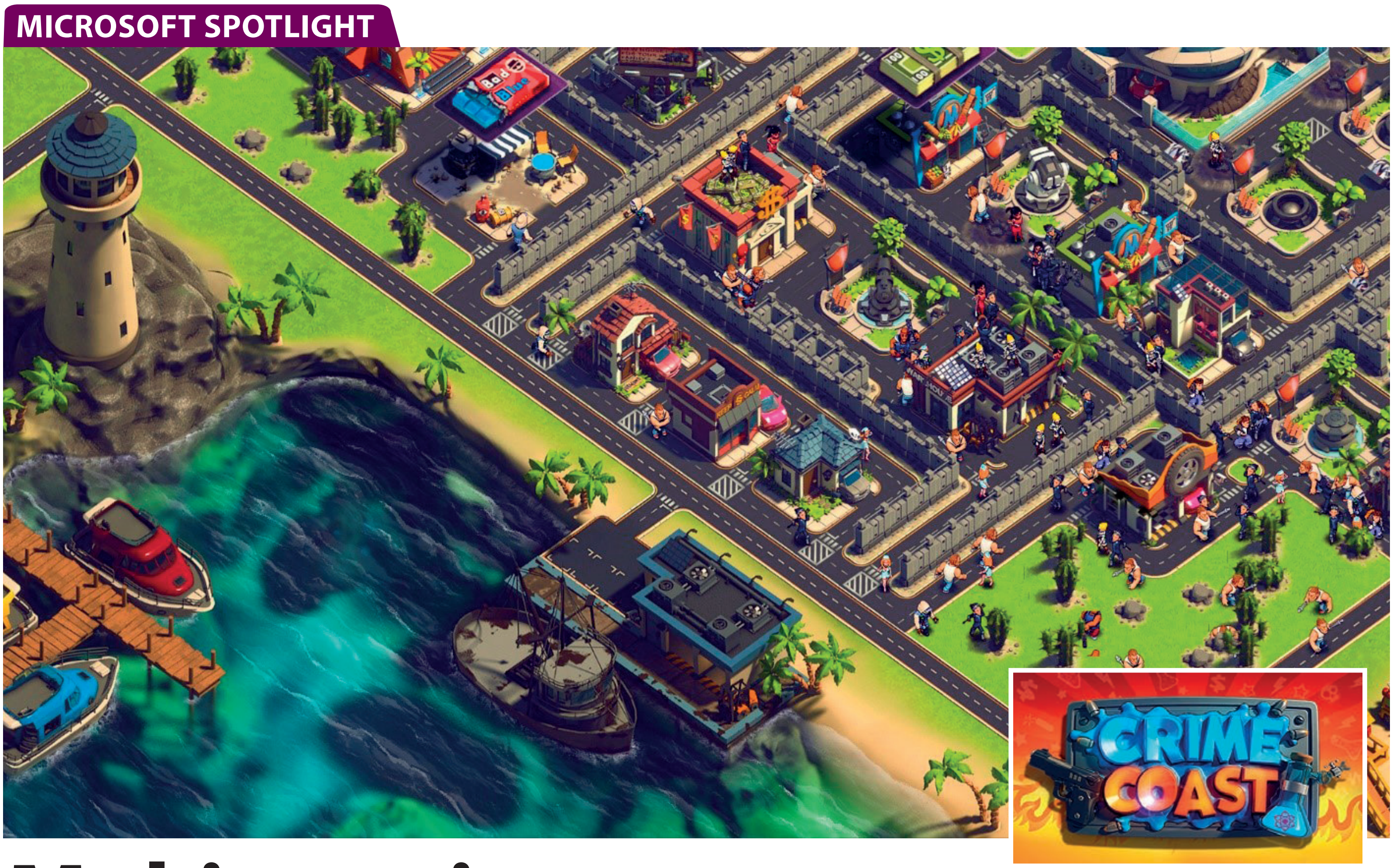
5. Make it default
Set Visual Studio Code as the default IDE in Unity.

A FEW NOTES

- Mono runtime may need updating to get everything to work.
- There's no debugging yet for Unity, but hopefully that will be coming soon.
- This is still in 0.1.0 preview mode so many things might change; I'd love to be even more tightly packed with Unity.
- There are already packages on Github to extend VS code functionality with Unity but I've not tried them yet. Check them out for yourselves:
- **https://gist.github.com/mwegner/86d7d4266089fa5cbe64**
- **https://github.com/kode80/VSCUnity**

This article was written by Unity technical evangelist Josh Naylor and is one of a series of online tutorials published on Microsoft's developer website. You can find more tutorials on **www.microsoft.com/en-gb/developers**. You can also follow Naylor on Twitter via @JoshNaylor.

MICROSOFT SPOTLIGHT



Making crime pay

Pixel Squad CEO **Will Mallouk** talks about funding, monetising and updating your game via the cloud

I STARTED PROGRAMMING when I was 13 years old, writing very simple games for the MSX system. That was more than 20 years ago now. I then wrote a small game in Assembly language when I was 18, which can still be downloaded from sourceforge.net.

Pixel Squad's core team consists of three members, and all of us have a console development background. I used to be an engine programmer making games for Xbox and PlayStation before starting Pixel Squad, but I've also co-founded another mobile games studio called WET Productions with a friend of mine called Mike Amerson. We have released three reasonably popular games already; *My Virtual Girlfriend*, *My Virtual Boyfriend*, and *Dark Breakers*. I also co-founded another studio called FunGameCo.

At the time of writing, we're currently working on our new game: *Crime Coast*. I thought that mixing *GTA* with *Clash of Clans* with a bit of added humour would make something unique.

The other full time members of the Pixel Squad team right now are Krysztof Nowak and Paul Trenchard, ex-Crytek employees. We also have contractors working full-time or part-time on *Crime Coast* with us, doing things like concept art, music, sound effects, rigging, animation, modelling, etcetera.

GREENSHOOTS

I heard about Greenshoots from many sources, but Nowak reminded me about it at the right time. I knew it was what we needed to take the project off the ground, so we applied. It's a great help, and I'm glad to be a part of it as it's making it easier for us.

To be honest, I didn't expect this level of help. For starters, Greenshoots has provided us with devices, Azure credits and all of the Microsoft software licenses we could have asked for. But more importantly, there is a team backing us there. We can ask for anything and they will help us.

I think that initiatives like this are very important for the region and country, simply because they could make the difference between the success and failure of a company.

> ***"If you're starting a small business, choose a segment where there's little or no competition."***
>
> Will Mallouk, Pixel Squad

We looked at other games for inspiration regarding our pricing model, and the main monetisation method we are looking at right now is the sale of virtual currency through microtransactions. We are also considering adding video ads in a later update.

One important thing to note is that all the content in our game is accessible without the need to spend money. We are focusing on pleasing spending and non-spending players equally, as both are very important to the game and its success.

We've tried in-app ads as a way to monetise before and they do work. Depending on the game type, ads can provide the largest share of income. It's possible to build a business solely on advertising-based games.

USING THE CLOUD

The original backend of our game was hosted on Amazon Web Services. I was surprised to find everything we needed on Azure, and the number of services that are provided there is incredible. We use SQL Server, Redis cache, data storage, virtual machines and push notifications. Also, we found the platform more friendly and easy to use than AWS, and were surprised by how easy the transition was.

You can find the full script on how to use Azure to do this at: **www.develop-online.net/tutorials**.

Keeping things simple may seem easy, but it's not. Be sure to remember that every day of your life, because even veterans seem to forget this rule at times. Make sure you get straight to the point when you're developing.

Second, dig deep to learn your craft. If it's programming, do a CS degree, or learn about algorithms and 3D math. I haven't got a CS degree myself, but I studied all this, including a lot of math, and know how important it is for a programmer. Go deep in the subjects. Start and finish simple projects.

And finally, if you're starting a small business, make sure you choose a segment where there's little or no competition. This is important advice irrespective of your industry. ■

Simogo's The Sailor's Dream is one of the many acclaimed games shown off at Nordic Game 2015, but its unique ideas were not enough to guarantee success – an attention to quality and marketing was also needed

THE FUTURE STATE

Creativity isn't enough

VMC's **Kirstin Whittle** on why indie developers need to think about more than development

I had the pleasure of attending the 2015 Nordic Game Conference in Malmö and was impressed with so many creative, ambitious new games.

Indie games continue to thrive in Scandinavia and Europe, and I enjoyed talking with many start-up developers along with a number of industry veterans working on new ventures, to learn about what they're doing and where they want their games to go.

The indie arena is great for developers who want more freedom and control to create the games they want to play, and the ongoing evolution of publishing models makes it possible to develop and release games that likely never would be released by an established publisher that expects a certain return on their investment.

But as is the case for any game, creativity isn't enough to spur a game's success.

PREPPING FOR SUCCESS

When the primary focus is on development, global production support services may not be a key focus, but developers need to have excellence in every area of their business, including marketing, legal, QA, localisation, live game operations and community management.

Managing quality in all of these areas is essential to getting people to play and keep playing your game because a great idea won't make a splash if it's poorly tested or localised, or isn't marketed to your target audience.

No one knows what the next big thing is going to be, and many indie developers aren't prepared to scale up quickly when their game takes off. Global production support services need to be an integral part of a development plan, but there's no one-size-fits-all solution for any game.

Here are a few key factors to consider:

Pick a partner, not a provider

A good partner will serve as a guardian of your IP, and will understand that your game is your baby.

Many global production support companies will take on indie projects and even offer advice prior to a formal engagement because they also want to be a part of the next big thing.

Talk to support partners who you trust and who have expertise to fill the gaps in the areas your in-house team is lacking.

Get them involved early

Getting your support partners involved early enables developers to benefit from the insights an experienced partner can provide.

This includes anticipating obstacles and pitfalls, planning for all contingencies, and having additional support specialists who are already in the loop, who know your game, and with whom you have an established rapport.

Think beyond the launch

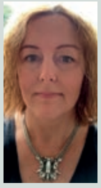
You want to offer more than just a great game – you want to give your customers a great experience, and this may include live game operations (games-as-a-service), customer support, and various forms of community management.

While an indie game may have humble beginnings, having it become a success doesn't mean your relationship with your global production support partners has to change.

Many developers see augmenting their staff to bring everything in-house as a sign of success, but the peaks and valleys of the production process mean the workload for different groups will ebb and flow.

Continuing to work with outsourced partners can remain the most cost-effective approach, especially partners who already know your game, have proven their value, and can continue to provide critical subject matter expertise while you maintain complete creative control of your IP.

So pick good partners and get them involved early so you'll be ready for anything. ■



Kirstin Whittle has 23 years of experience in the UK games industry and is one of *MCV*'s 2015 Top Influential Women in Games. She manages business development in Europe for VMC. **www.vmc.com/games**

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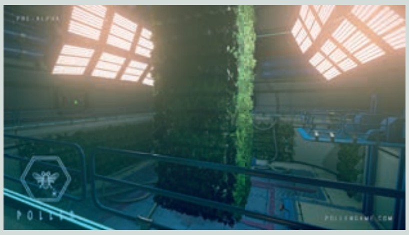


UNITY FOCUS

Seeding the future

Mindfield Games discusses working with Unity and virtual reality for its debut title, Pollen

VIRTUAL REALITY HAS unlocked new potential for video games, and enabled studios to explore creative visions that were never possible before.

One such studio is Finnish start-up Mindfield Games, which is home to veterans of Remedy, Rovio, Housemarque, RedLynx and more. In 2013, the team founded Mindfield specifically to create virtual worlds that only VR devices can do justice for.

The first example of this is *Pollen*, an upcoming first-person exploration game for PC and optimised for Oculus Rift. The game puts players in the role of an astronaut who finds herself stranded on Titan, one of Saturn's moons.

Little else is known about the game, but Mindfield promises it will be story-driven, with an emphasis on spectacular visuals.

"*Pollen* is heavily influenced by movies like *2001: Space Odyssey* and the original *Solaris*," says CEO and co-founder Ville Kivistö. "We hope to capture the atmosphere from games like *The Dig* and *Myst*. The game is optimised to be played on VR headsets but you can fully enjoy the game even without one."

While many engines offer VR support now, the team opted to concentrate on using Unity – and Kivistö says the decision was a no-brainer.

"Unity's support for VR devices is pretty much the best in industry and we also have previous experience working with Unity so we were sure that we can fully realise our vision with it," he says.

"The in-editor preview for Oculus is really useful, as is the short compile-and-play cycle that makes it possible to iterate really quickly. At the prototyping phase, we were able to prototype dozens of gameplay mechanics in a very short time, thanks to Unity's ease of use."

VYING FOR VR

Mindfield specifies Oculus Rift as the game's target platform, concentrating on making it run smoothly on the pioneering headset, but that doesn't mean it has neglected the rise of other VR devices.

> ***"By completing projects you learn best how the whole development process goes."***
> Ville Kivistö, Mindfield Games

"When we optimise for Oculus, we also optimise the game for all the other VR headsets as well," Kivistö explains. "It is a natural choice to use in development as its dev kits have been on sale for the longest time – most of our VR headsets at the office are Oculus Rifts. The game will definitely be playable on other headsets as well, like Vive and OSVR, and we have plans to port the game to Project Morpheus as well."

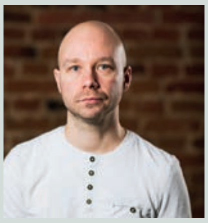
Developing for virtual reality is still largely uncharted territory, a challenge that Mindfield has embraced. As with many studios exploring the possibilities of VR, the team has encountered a number of obstacles, but its choice of tech has helped overcome these.

"Achieving the high frame rate is the biggest challenge," says Kivistö. "When you have so many pixels with such a high frame rate, you'll need to really optimise your draw calls. Unity's great profiling tools have proven to be very useful, as well as its dedication to optimise the VR side of their engine, introducing features such as shared shadow maps and the upcoming DX12 support."

Looking forward, Mindfield is hoping to see Unity add even more optimisations for stereo camera rendering, as well as support for new tools Gameworks VR and LiquidVR.

On the subject of developing with Unity – whether for VR or traditional games – Kivistö has the following advice: "Try to finish whatever you start. By completing your projects you learn best how the whole development process goes and what areas you should spend your time on during your next projects." ■

Pollen
Developer: Mindfield Games
Publisher: Mindfield Games
Platform: PC, Oculus Rift
www.pollengame.com



Mindfield Games CEO Ville Kivistö says Unity's VR support meant it could prototype dozens of gameplay mechanics in a short space of time

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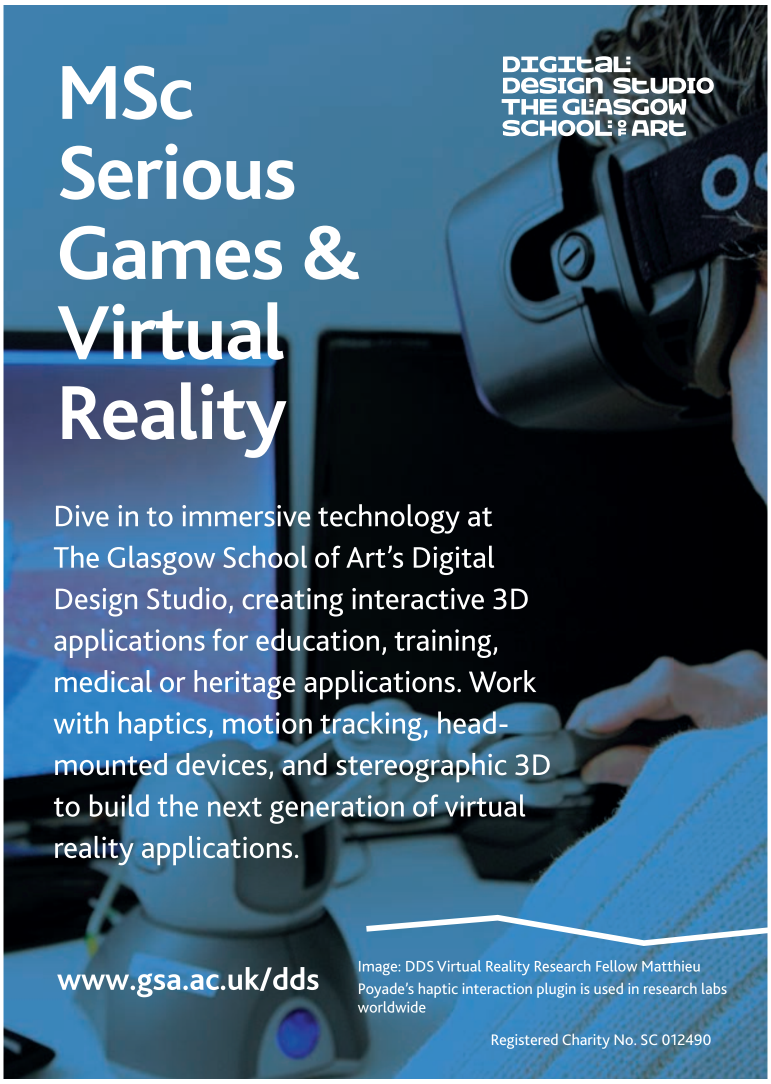

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Image: DDS Virtual Reality Research Fellow Matthieu Poyade's haptic interaction plugin is used in research labs worldwide

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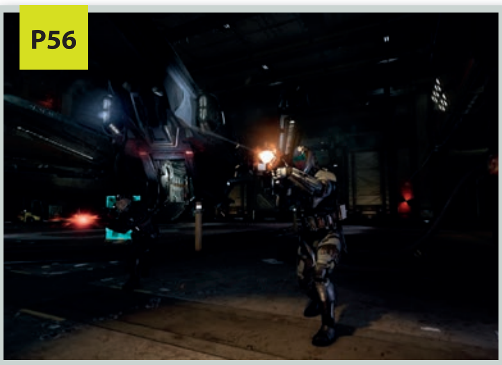
SERVICES SPOTLIGHT:
Side

P56



TOOLS SPOTLIGHT:
Kythera

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STUDIO SPOTLIGHT:
Payload Studios

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SERVICES SPOTLIGHT

This month: **Side**

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Great Titchfield House,
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London, W1W 8BD

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E: ben@side.com
W: www.side.com

UK FIRM SIDE provides services for character performance in games, including casting, directing, voice production, performance capture and localisation.

Speaking to *Develop*, Side's business development manager Benjamin Ryalls says its casting department is focused on finding both fresh talent and also bringing in experienced actors into the games industry. It also has writing agency Sidelines providing professional creative writers.

> ***"Our size and structure allows us to give our clients a complete service."***
> Ben Ryalls, Side

And as well as an array of performance directors and project managers, the company's in-house recording facilities include four automatic dialogue replacement (ADR)

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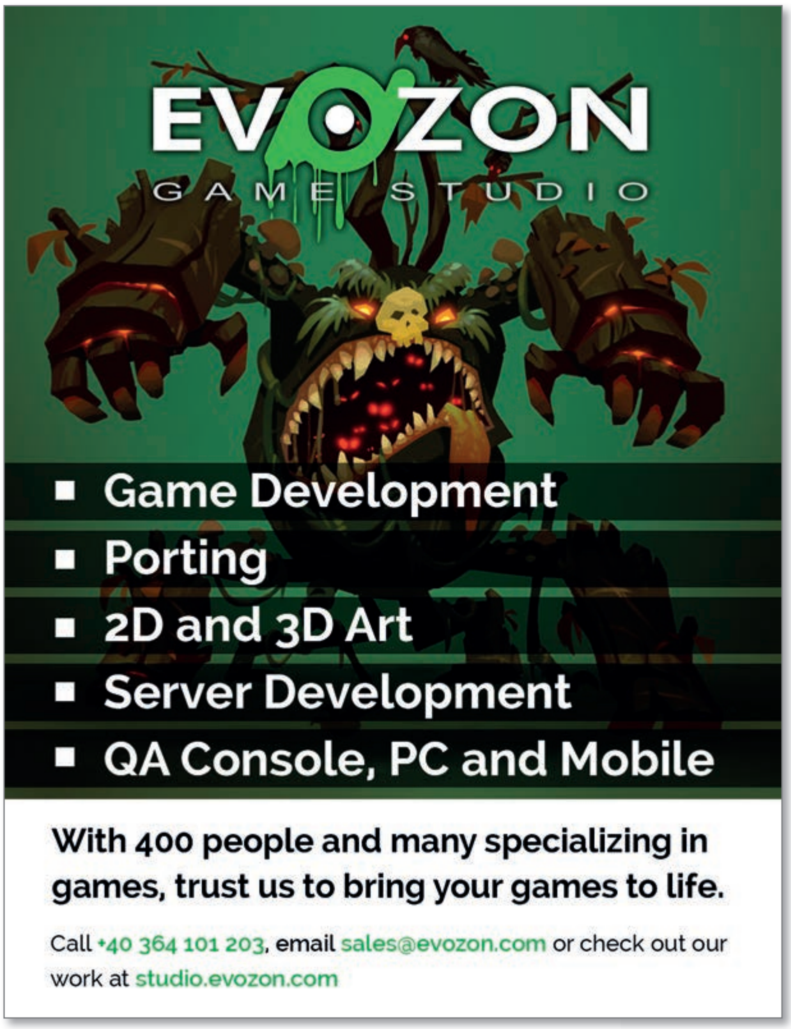

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suites run by its own engineers, and on-location audio teams for crowd sessions and full performance capture shoots.

"We're a complete resource for character performance in games," says Ryalls. "Our size and structure allows us to give our clients a complete service whilst delivering the high quality results we are known for."

The firm has worked on a number of high profile projects. For Sumo Digital's *LittleBigPlanet 3*, its casting team reunited famous actors Stephen Fry and Hugh Laurie for voice acting duties, and directed and recorded all the game's performances.

Its work on Creative Assembly's *Alien: Isolation*, meanwhile, saw it cast the actors, while the company's Kate Saxon was performance director throughout rehearsals, shoots and voice sessions.

> ***Engagement with the performances can be easily broken if you have poor acting.***
>
> Ben Ryalls, Side

Perhaps one of its biggest projects, however, was CD Projekt Red's hit RPG *The Witcher 3: Wild Hunt*. Ryalls describes it as a "vast undertaking" with over 450,000 words to record in a script that featured more than 950 characters. The project was recorded over a period of two and a half years, and was again led by voice director Saxon.

"We provided CD Projekt RED with a full voice production service and developed bespoke tools that allowed us to manage and record such a high volume of assets whilst maintaining quality performances throughout," says Ryalls.

He states for today's discerning gaming audience, many consumers expect from games the kind of performances they may see in a good film or television show.

"On a narrative-driven title, engagement with the performances can be easily broken if you have poor acting, bad accents, or voices that don't suit the characters," he states. "To get the best performances you need excellent casting, direction and talent."

These big projects have come to Side in part due to the firm gradually increasing its services related to performance capture.

At the time of writing, the company currently has an audio team on-location on a shoot that has now entered its 37th day, for which it cast over 25 actors to provide all elements of performance. ■

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TOOLS SPOTLIGHT

This month: **Kythera**

E: contact@kythera.ai
W: www.kythera.ai

As games have grown more complex and expectations have risen over the years, particularly in the new generation of consoles, AI has become a key pillar for immersion.

Edinburgh outfit Moon Collider is one firm that is taking on the task of believable artificial intelligence with its Kythera technology. The AI tool features dynamic navigation meshes, sophisticated behaviour trees, debugging and playback tools, flight navigation and a high-performance architecture that's scalable across multiple cores.

The firm has worked with a number of select companies using its AI tech, including SolarFall's crowdfunded game *Umbra* and Cloud Imperium's trailblazing *Star Citizen* (*pictured*).

But Moon Collider isn't just a middleware provider. The company straddles the divide between tools and services company, working with developers to utilise its technology.

"Our goal isn't to sell as many licences as possible. Instead, we're aiming to find select games partners with inspiring visions for AI, and work with them to achieve them," says Moon Collider CEO and lead architect Matthew Jack.

"So in essence we're offering development services alongside a powerful, proven product."

Jack says AI has emerged as a powerful way to distinguish your game, but the quality bar is rising fast. He adds that to do something new in this space can be difficult to achieve, even if there is a budget available for creating a new system.

"Building a great AI team and a great AI system is a long process, which tends not to fit in a single product's development cycle," explains Jack. "Delivering an in-house solution soon enough often just isn't possible.

"Off-the-shelf middleware can help, but we're going that crucial step further. We offer a flexible system with powerful features, but we expect to extend those for each game – to tailor it to the individual title's needs. It's the best of both worlds."

Moon Collider has worked with Cloud Imperium to tailor its AI tools specific to Star Citizen's needs

One of the key areas Moon Collider is looking at as it develops Kythera is cloud support, which the team has identified as an important direction for its future as it opens up new possibilities for AI.

> ***"We're offering development services alongside a powerful, proven product."***
> Matthew Jack, MC

But, in line with its collaborative method to licensing, Jack says its development roadmap is based around what its clients need most, rather than the firm's own singular vision for the tech. ■

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STUDIO SPOTLIGHT

This month: **Payload Studios**

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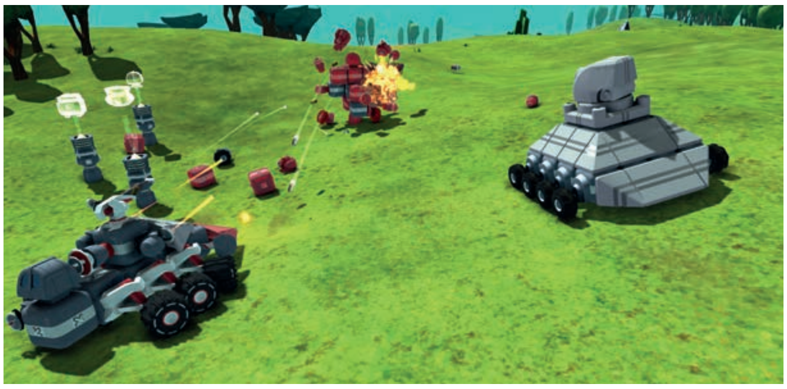
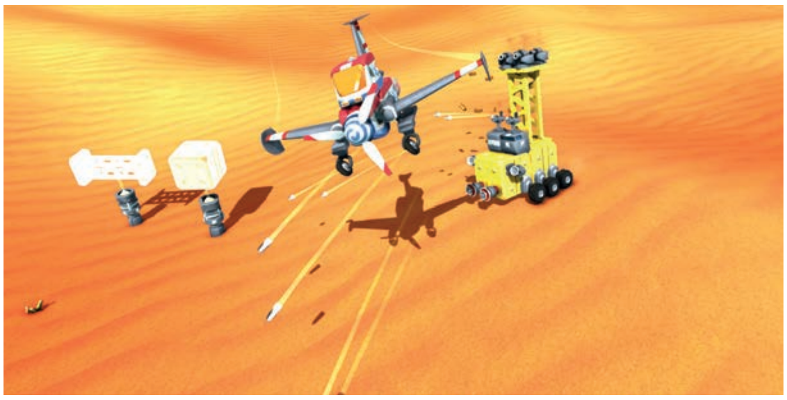
W6 0LH

E: info@TerraTechGame.com
W: www.TerraTechGame.com

Payload founder Russ Clarke (pictured) says the secret to TerraTech's Kickstarter success was the studio's efforts to build a community around the game before the crowdfunding campaign even began





Tell us about your studio for those not familiar with your work.

Russ Clarke, founder: Payload was formed in late 2013 and now has eight full-time developers, based in Hammersmith, London. Most of us worked together at various times in other companies, including Ideaworks/ Marmalade and Headstrong Games, plus a couple of newcomers to mix things up. The studio was created in order to make *TerraTech*, and we hope that will keep us busy for some time to come, though we haven't ruled out other games in future.

What makes your studio stand out?

Even before starting to hire developers, we decided *TerraTech* would be a community-driven project, with full transparency and player involvement in every step of the process. We started showing our prototype in public super early – February 2014 – and ramped up the exposure in stages: a demo on Indiedb.com, then Kickstarter, then a closed beta through our website, then open beta on the Humble Store, and Steam Early Access from February this year.

The advantage of this approach is that there are no big surprises – each stage is bigger than the last and serves as a 'warm up' for the next. We have been updating the game roughly every two weeks for over a year, and some of our players have been with us since the beginning. Throughout that time, we've been broadcasting on our Twitch channel almost every weekday.

What was the biggest development in 2014 for you?

It's been a succession of big events, but I guess the Kickstarter was the most dramatic. It was one of those campaigns that looks like it won't make it until the very end – we got some great exposure in the later stages, on YouTube and by releasing our demo on Steam, and crossed the line with 24 hours to go.

Another thing I'd single out was the decision to launch on the Humble Store before Steam Early Access. This is an unusual route, but we got a great response from the Humble community, and it was valuable as an intermediate step towards the bigger numbers on Steam.

What did you learn from your success with the *TerraTech* Kickstarter campaign?

The most important thing was to validate *TerraTech* as a viable product. We already knew people liked playing the game and were excited about where it could go, but after 1,600 people put money down, we knew we had something that we could actually build a viable business on.

Aside from that, it was good to learn that, despite all the cynical things said about video game Kickstarters these days, they still work and can be a great way to help get something off the ground. You need to do your homework, and set realistic expectations, but I'd recommend it – as long as you can handle the drama.

How will you ensure the final game lives up to that success?

By putting the players first. Our community is incredibly dedicated: some players have put in hundreds of hours, and know the game almost better than we do, so we pay attention to what they say. It can be daunting to make a game this way, and I wouldn't recommend it for every genre – you can't afford to be too precious about your vision – but when you get it right, the community provides a vast amount of support and encouragement.

> ***"TerraTech was one of those Kickstarters that looked like it wouldn't make it until the very end."***
>
> Russ Clarke, Payload Studios

Are you recruiting at the moment?

We're looking for another programmer. Someone experienced – for example, ten years working in the industry – who knows Unity. Preferably with expertise in network programming, AI or graphics. We aim to expand to about ten developers, this year. Any more and we'll need a bigger office.

What do you hope to accomplish this year?

The main priority is to get *TerraTech* released. The plan is to continue adding to it long after that, but we don't want to be in Early Access forever – we'd like to get to a solid level of quality and core feature completeness, and then add content incrementally after that. We'll also be starting work on other platforms, in parallel with extending the game.

Tell us something that no one knows about Payload.

Payload Studios has moved one floor higher each year that we've been in our office building. If we're still in the same place in 2018, we will have to build a tower on the roof. ■

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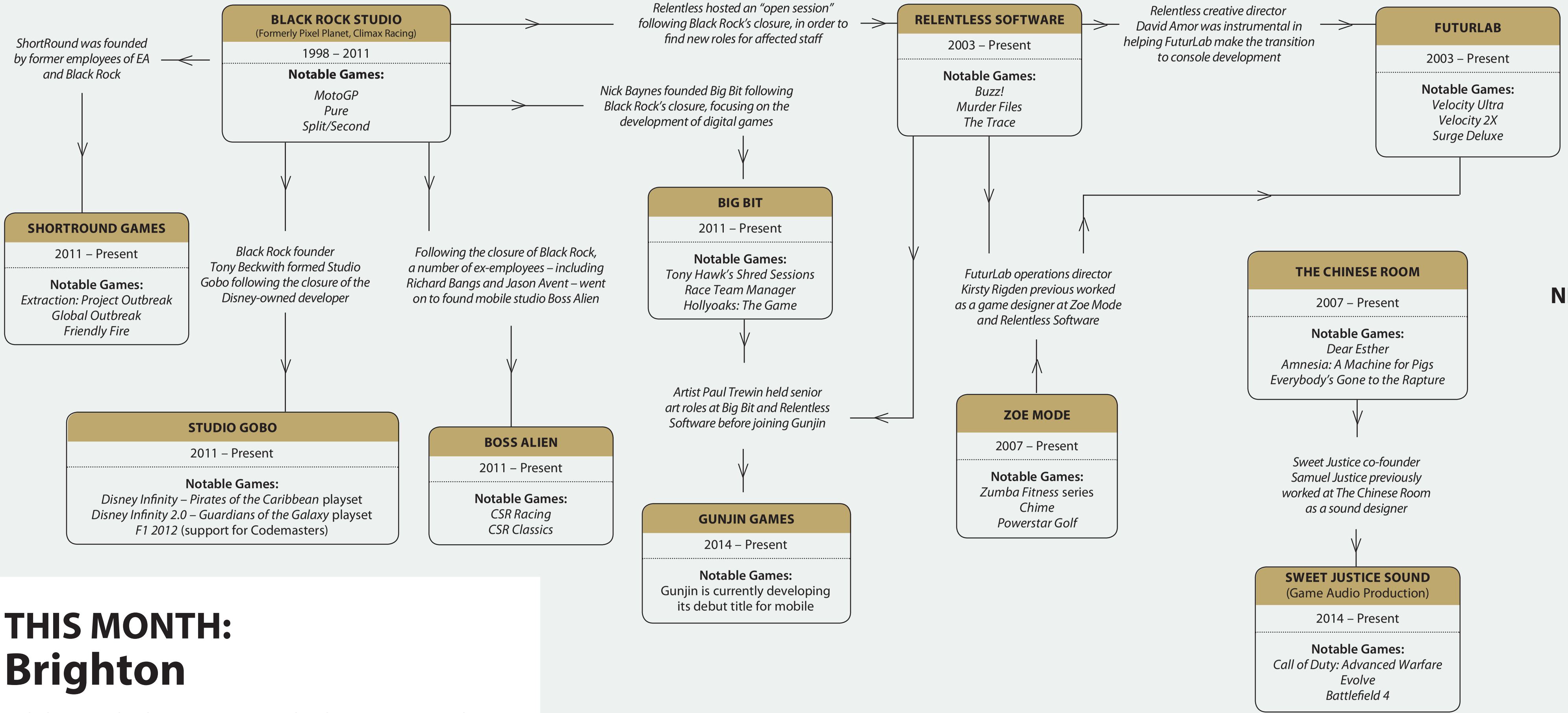
BLACK ROCK STUDIO
(Formerly Pixel Planet, Climax Racing)
1998 – 2011
Notable Games:
MotoGP
Pure
Split/Second

ShortRound was founded by former employees of EA and Black Rock

SHORTROUND GAMES
2011 – Present
Notable Games:
Extraction: Project Outbreak
Global Outbreak
Friendly Fire

Black Rock founder Tony Beckwith formed Studio Gobo following the closure of the Disney-owned developer

STUDIO GOBO
2011 – Present
Notable Games:
Disney Infinity – Pirates of the Caribbean playset
Disney Infinity 2.0 – Guardians of the Galaxy playset
F1 2012 (support for Codemasters)

Following the closure of Black Rock, a number of ex-employees – including Richard Bangs and Jason Avent – went on to found mobile studio Boss Alien

BOSS ALIEN
2011 – Present
Notable Games:
CSR Racing
CSR Classics

Relentless hosted an "open session" following Black Rock's closure, in order to find new roles for affected staff

Nick Baynes founded Big Bit following Black Rock's closure, focusing on the development of digital games

BIG BIT
2011 – Present
Notable Games:
Tony Hawk's Shred Sessions
Race Team Manager
Hollyoaks: The Game

Artist Paul Trewin held senior art roles at Big Bit and Relentless Software before joining Gunjin

GUNJIN GAMES
2014 – Present
Notable Games:
Gunjin is currently developing its debut title for mobile

RELENTLESS SOFTWARE
2003 – Present
Notable Games:
Buzz!
Murder Files
The Trace

FuturLab operations director Kirsty Rigden previous worked as a game designer at Zoe Mode and Relentless Software

ZOE MODE
2007 – Present
Notable Games:
Zumba Fitness series
Chime
Powerstar Golf

Relentless creative director David Amor was instrumental in helping FuturLab make the transition to console development

FUTURLAB
2003 – Present
Notable Games:
Velocity Ultra
Velocity 2X
Surge Deluxe

THE CHINESE ROOM
2007 – Present
Notable Games:
Dear Esther
Amnesia: A Machine for Pigs
Everybody's Gone to the Rapture

Sweet Justice co-founder Samuel Justice previously worked at The Chinese Room as a sound designer

SWEET JUSTICE SOUND
(Game Audio Production)
2014 – Present
Notable Games:
Call of Duty: Advanced Warfare
Evolve
Battlefield 4

THIS MONTH:
Brighton

With the entire development community heading to Britain's south coast this month, **Lee Bradley** takes a closer look at the local studios

NEXT MONTH:
Liverpool

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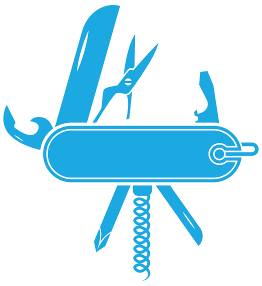

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